

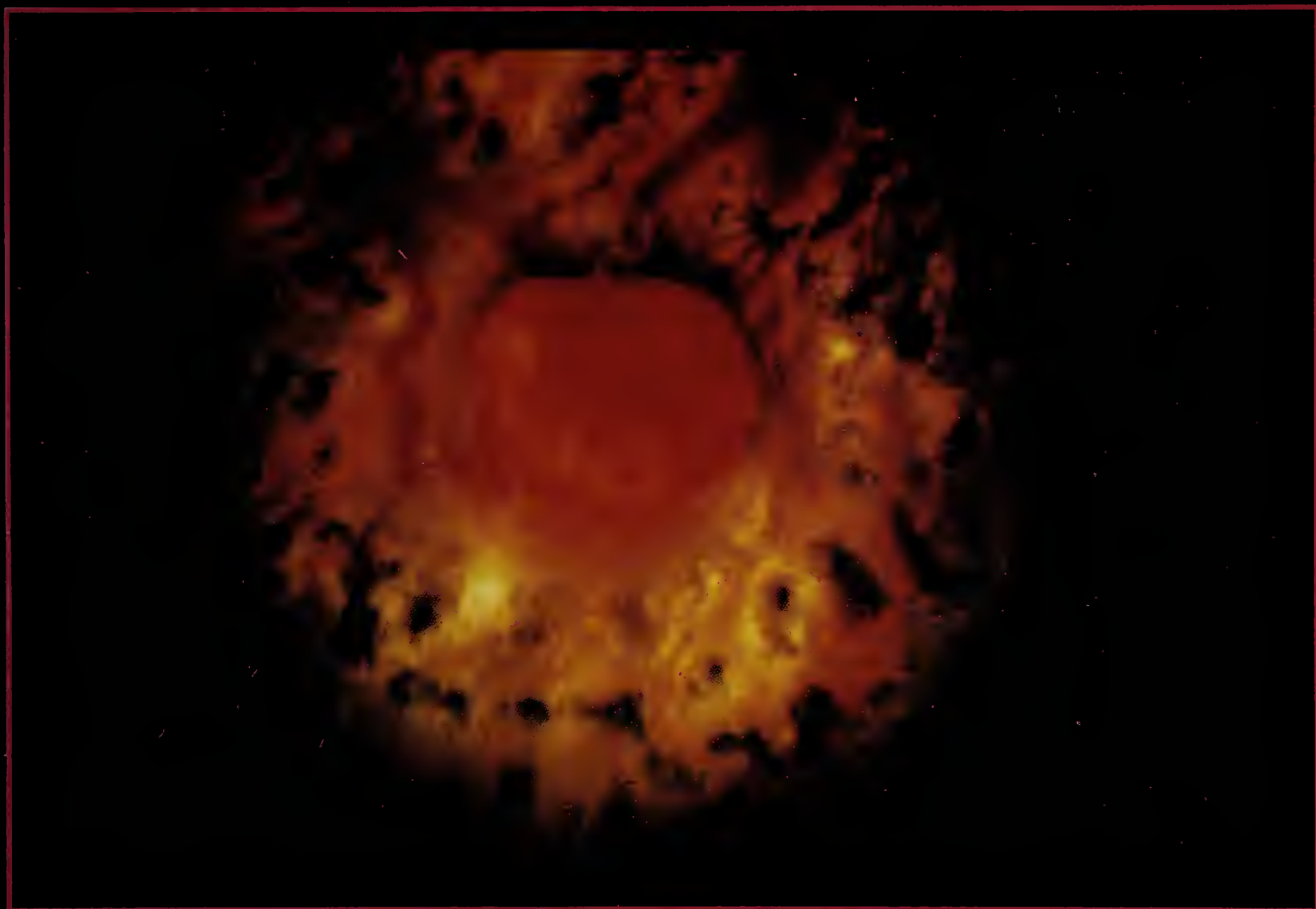


University of Toronto

MEDICAL JOURNAL

VOL. LXV

NO. 3



- Microvascular Surgery
- Attitudes Towards AIDS Patients
- Wilson's Disease
- Lifesaving Ocular Signs
- Tonsillectomy and Adenoidectomy
- Helen MacMurchy M.D. 1862-1957
- Acetabular Floor Bone Grafting



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VOLUME 65, NUMBER 3 APRIL 1988



p.6

- 6 Microsurgery**
AN INTRODUCTION TO
MICROVASCULAR SURGERY
By Robert A. Mounsey, 8T8.

- 12 Community Health**
ATTITUDES OF MEDICAL STUDENTS
TOWARD AIDS PATIENTS
By Paul Wozniac, 9T0.

- 16 Gastroenterology**
A CASE OF WILSON'S DISEASE PRESENTING
AS FULMINANT HEPATIC FAILURE
AND HEMOLYTIC ANEMIA
By Joel Finkelstein, BSc, 8T8, and Paul Greig, M.D.

- 20 Feature Article**
LIFESAVING OCULAR SIGNS
By Gary Morrow, 8T9,
and Raymond Stein, M.D., FRCS(C).

- 28 Otolaryngology**
CLARIFYING THE INDICATIONS FOR
TONSILLECTOMY AND ADENOIDECTOMY:
A REVIEW OF THE LITERATURE
By Larry White, 8T9.

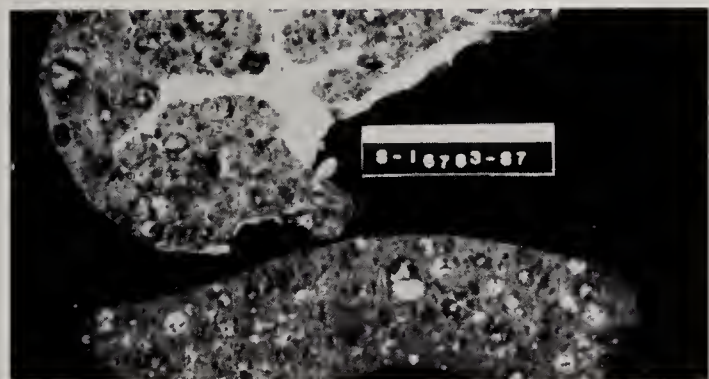
- 34 History of Medicine**
HELEN MACMURCHY M.D. 1862-1957:
LA FEMME OUBLIÉE
By Rose Sheinin, PhD, FRSC, D. Hum. Lett.,
and Shabir Bimji, PhD, 9T0.

- 38 Orthopaedics Rounds**
LATE PROTRUSIO FOLLOWING ACETABULAR
FLOOR BONE GRAFTING
By H.U. Cameron, M.B., ChB, FRCS(C),
S. Bhimji, PhD, 9T0, and M.J. Weinberg, 9T0.

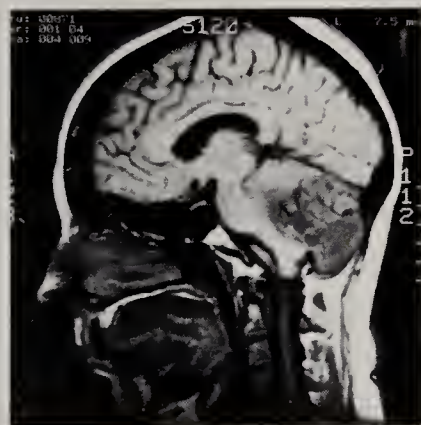
- 42 News Updates**

- 44 Book Reviews**

Cover Photo:
Post-laser photocoagulation of a retinal angioma in von-Hippel-Lindau
disease.
(photo courtesy of Mayo Medical School, Department of Ophthalmology.)



p.16

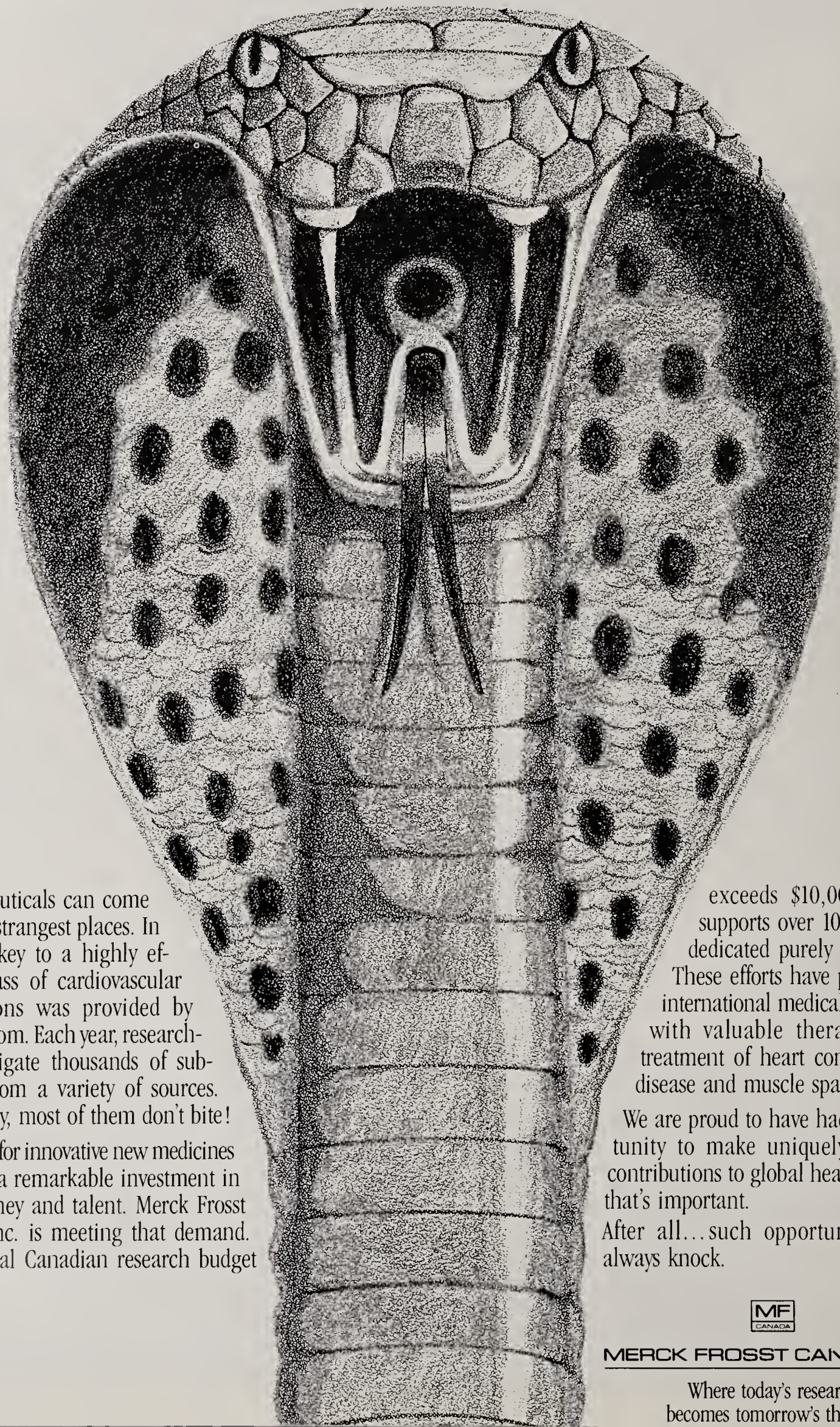


p.20



p.38

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Editorial

Catherine Birt, Michael Paré and Raymond Ng
Editors-in-Chief

This is the final issue of *The University of Toronto Medical Journal* for the school year 1987-1988. We, the editors-in-chief, have found our association with the Journal this year truly challenging but also very enjoyable and rewarding. We would like to express our sincere appreciation for all the important contributions of the Journal staff, the authors, the artists and all others involved. It is unfortunate that space does not permit us to print the names of all those who have contributed so much of their time and energy.

This final issue clearly reflects our philosophy that the Journal should publish a wide range of topics that represent the true scope of medicine and surgery. The articles in this issue range from ophthalmology to microsurgery to the history of medicine.

We are particularly excited about the article *Life Saving Ocular Signs* by Gary Morrow and Raymond Stein. Not only is this paper clearly of significant clinical importance but in addition it is distinguished by being the second article in the history of the Journal to be printed in colour.

Paul Wozniac's paper entitled *Attitudes of Medical Students Towards AIDS Patients* explores a fresh new perspective on a current medical problem.

The Editors of the Journal believe that the encouragement of undergraduate medical research in the Faculty of Medicine is part of the mandate of the Medical Journal. We are therefore pleased to introduce the first *University of Toronto Medical Journal Supplement* in which are printed the abstracts of the second annual Undergraduate Medical Research Day.

Lastly the editors, on behalf of the entire Journal staff, would like to thank all our readers, patrons and advertizers for their continuing support.

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An Introduction to Microvascular Surgery

Robert A. Mounsey, 8T8



Figure 1: Comparing 25 gauge needle to a vessel that has been repaired.

Abstract

Microvascular surgery is an area of medicine that offers great promise in restoring limb function and providing tissue coverage to open sites. As clinical uses of microvascular surgery increase, all medical clinicians must become familiar with its applications. This article discusses the basic instruments and techniques of microsurgery. It also covers some common applications of microvascular surgery.

Introduction

Microvascular surgery is a relatively new subspecialty of surgery. It has evolved over the past twenty years from laboratory experiments in re-anastomosing microvasculature, to the point where today there are many clinical applications for microvascular surgery. Although microvascular surgery is performed by only a very small group of surgeons in highly specialized centres, it is important for all clinicians to be acquainted with some rudimentary knowledge of the subject. The clinician must be able to quickly recognize whether or not a trauma victim entering the emergency department is suitable for consideration of re-attachment of an amputated limb or digit. The clinician must also know how to prepare the amputated tissue for transport to ensure it is suitable for re-plantation when it arrives at the microsurgical centre.

The clinician should know what medical conditions microsurgery can be used to treat, so that when indicated an appropriate referral can be made. Microsurgery is presently confined to specialty centres. As microsurgery evolves it is conceivable that procedures now felt to be too specialized for a community based hospital will become routine. In the future microsurgery may be practised in the community, indeed this is already occurring and will become more common in the future. This article will acquaint the reader with some concepts in microvascular surgery.

Basic Techniques

Microvascular surgery is confined to the anastomosis of small vessels (usually 1-5mm in diameter). It utilizes magnifying devices and special equipment. The operating microscope is essential, along with a variety of microscissors, clamps and sutures designed specially for this type of surgery. The needles and suture material are so fine that they are barely visible with the naked eye. The suture material is less than 1/20 the diameter of a human hair. The sutures are so small that one would need 100 of these microsutures side by side to equal the smallest sutures used in practice for routine skin closures. The mastery of these tools takes practice, usually in a microsurgical teaching laboratory.

End-to-end anastomosis is one method of revascularization. For an arterial anastomosis two or three guide sutures are equally spaced on the vessel. These initial sutures allow correct orientation of the vessel. The next step involves the placement of more sutures to hold the two vessel ends in place and ensure that the anastomosis does not leak. The vessel diameter and

surgical technique employed dictate the number of sutures used for this purpose. The majority of microvascular anastomoses are end-to-end. If each vessel differs greatly in diameter special techniques, and sometimes a vessel graft, are needed to perform the anastomosis.

The second less common technique of anastomosis is *end-to-side*. This requires an elliptical incision in the side of one vessel. Then sutures are placed to anastomose one vessel to the side of the second vessel. The order in which sutures are placed in this anastomosis is very precise to ensure proper orientation of the vessels and a competent seal.

Clinical Applications of Microvascular Surgery

The clinical applications of microsurgery may be divided into replantation and free flaps. Replantation involves the re-attachment of a limb or digit. A flap may be defined as a block of tissue which is transferred with its vascular pedicle divided. Microvascular surgery allows a block of tissue from one point in the body to be removed and attached to a new site.

Free Flaps Flaps can be used anywhere a tissue deficit exists. The use of microvascular surgery allows tissue to be transported from virtually any part of the body to another site. This is useful for burn reconstruction, hand surgery, post-mastectomy breast reconstruction, bone deficits, and soft tissue deficits. The potential for free flap use when coupled with microvascular surgery is endless. The groin flap is one example of a skin flap. This flap relies on the superficial circumflex iliac and superficial inferior epigastric arteries for perfusion. The maximal size of this flap is 30 x 20cm, therefore it can be utilized to close large defects. The area from which the flap is taken is usually closed primarily.

In all operations with free flaps the principles are the same. A site needs tissue coverage but no local tissue is available. A site of the body is chosen as a donor. This block of tissue is dissected free in the operating room and transferred with its accompanying vasculature. The vessels are then anastomosed using microsurgery to re-establish perfusion. In most cases the site which served as a donor is closed primarily but occasionally a skin graft will be necessary.

A free "flap" is not always composed solely of only skin. It may include muscle, bone or less commonly G.I. tract or omentum. Myocutaneous flaps usually have a

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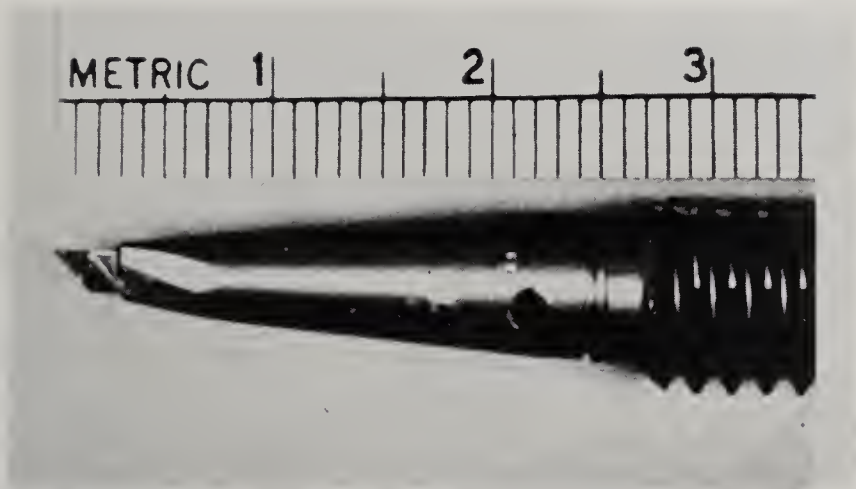


Figure 1: Size of microsurgery scalpel compared to one millimetre markings on ruler.



Figure 2: One millimetre markings on a ruler placed beneath a typical microsurgical vessel repair.



Figure 3: Pre-operative depression scar with fistulous tract after treatment for maxillary cancer.



Figure 4: Cheek flap rotated to close defect and dorsalis pedis flap with extensor digitorum muscle to close the buccal mucosal defect and provide bulk.

good blood supply. These flaps are not difficult to raise, since they are based on standard anatomy. Each vascular pedicle is easily dissected. This type of flap allows a large amount of skin to be taken which overlies the muscle. The disadvantage of this flap is that the transplanted muscle undergoes a variable amount of atrophy. The site from which the muscle was removed is naturally weaker, making the site prone to herniation if it is an abdominal muscle. A flap that fails due to thrombosis of the re-attached vessels undergoes necrosis. This is a serious risk of any free flap procedure. Fortunately in the hands of an experienced microsurgeon the success rate of flaps is approximately 85%.

Replantation Replantation of digits and extremities is the other major area of clinical microvascular surgery. Most patients are aware that surgery to re-attach digits exists. The patient may strongly demand that an amputated digit be replanted. However, not all amputated digits can or should be replanted. Therefore the clinician must be aware of the circumstances in which it is indicated. The final decision to re-attach a digit will be made by the microsurgeon, but some general rules can be stated. The loss of a thumb is devastating to hand function and it should be re-attached. In general single digit amputations should not be replanted, unless it is the thumb. Amputations in the younger age

groups should also be replanted. If the patient has sustained amputation of many digits, re-attachment of as many digits as possible should be attempted. If the patient has life threatening injuries and is undergoing emergency resuscitation no replantation is possible. A severely crushed amputated part making the anatomy unrecognizable cannot be replanted. A patient with severe peripheral vascular disease, due to diabetes mellitus for example, is a poor candidate for replantation. Injuries to fingertips should not be replanted.

The amputated limb that is to be re-attached must immediately be placed in a sterile plastic bag. The limb should be cooled, since this will optimize the chance of successful re-attachment. The exact details of limb preparation for transport are best obtained from the microvascular centre to which the patient is referred.

Replantation is performed by a surgical team. One group of surgeons identifies the anatomy of the amputated part, tagging each structure. The vessels are connected by the techniques discussed earlier. Unlike a skin flap, in replantation it is necessary to obtain skeletal fixation, repair tendons and repair nerves.

Summary

This article has discussed the basic techniques of microvascular surgery. It has explored the two main clinical applications of microvascular surgery: replanta-

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Figure 7: Pre-operative photograph of left distal palm amputation.



Figure 8: Four years after replantation.

tion and free flap transfer. The role of microsurgery in medicine is growing; as better equipment and new techniques are invented, microvascular surgery will play an ever larger role in medicine. Therefore, it is important for all medical personnel to be familiar with the concept of microvascular surgery.

Acknowledgement

The author of this article would like to thank Dr. J.B. Boyd, plastic surgeon at Toronto General Hospital, for editing this article. The photographs were provided by Daniel Yim.

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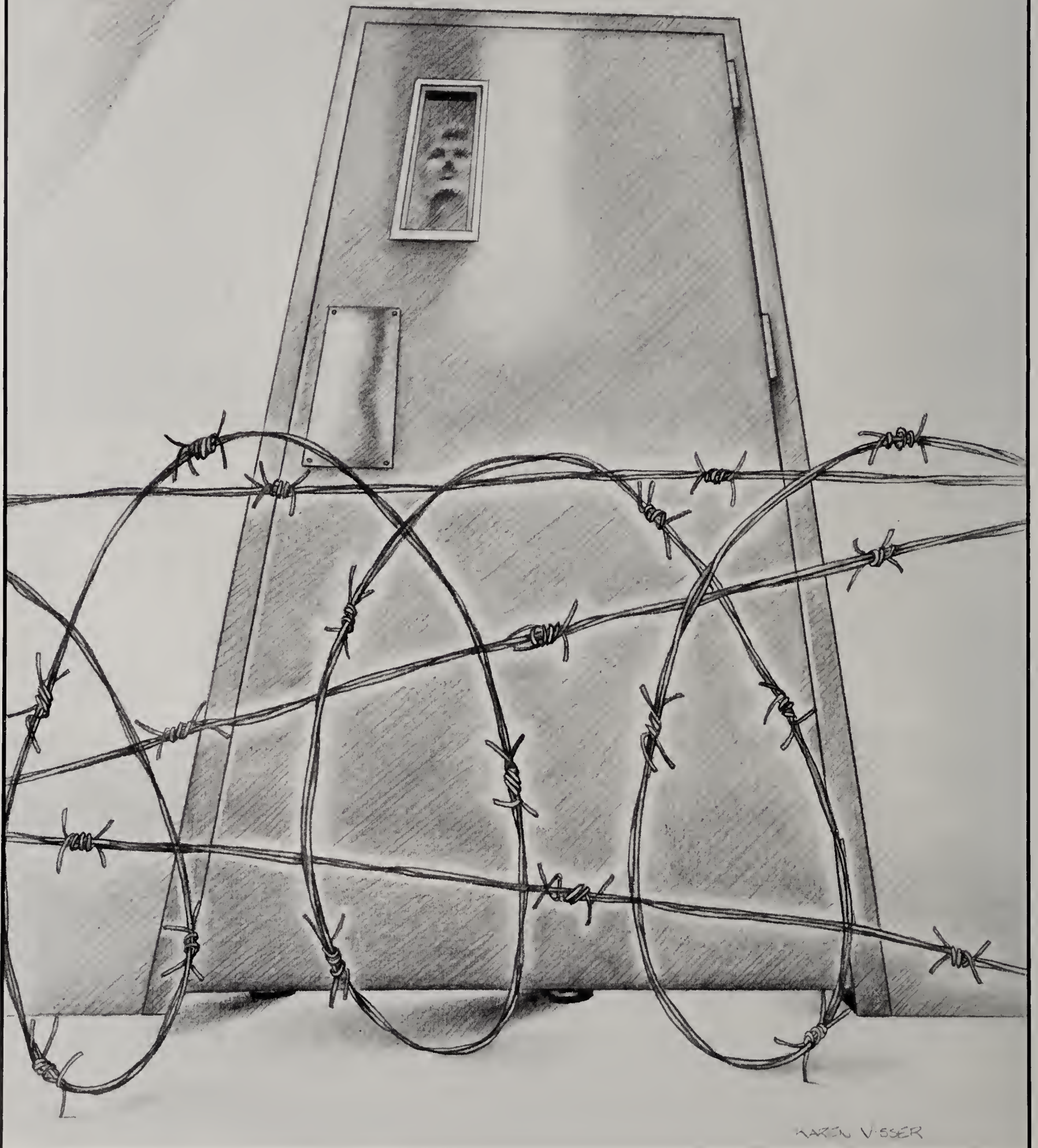
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Attitudes of Medical Students Toward AIDS Patients

Paul R. Wozniak, 9T0



MARIN V. SSER

Abstract

This article summarizes the results of a fifteen-question survey given to first year medical students (9T0) at the University of Toronto, concerning the attitude towards AIDS patients and the possibility of homophobia biasing the students' perceptions. The majority of students were knowledgeable with regard to mode of transmission of the AIDS virus, but upon further investigation it was found that 56 percent still feared contact with AIDS infected individuals. When asked if AIDS was the just reward for a gay lifestyle, 22 percent agreed. The implications of these findings will be discussed with regard to the need for patient oriented education programs to enable students to develop non judgemental attitudes towards AIDS patients.

Introduction

Attitudes towards homosexuals have been influenced by the epidemic of acquired immune deficiency syndrome (AIDS) as seen by recent instances of overt discrimination in such areas as housing, employment and medical care. Recent examples of this "new" discrimination include denial of: insurance protection, funeral services and termination of long-standing employment.^{1,2} Another example includes prejudicial attitudes and feelings towards the homosexual AIDS patient by the medical health profession.³ It has been reported that in some hospitals and other health centres, AIDS has received various judgmental titles such as, "the gay plague" or "WOG" (Wrath of God). In England an unbiased survey of public attitudes was taken. It was found that 70 percent of the respondents admitted that they would keep their distance from an AIDS patient at their place of employment.¹ The results of this study were said to show a "ferocious reaction to the "guilty" homosexuals ... who are seen to be at the very root of the AIDS problem."¹ Such occurrences may show the reemergence of homophobia and the activation of increased anxiety toward all gay and lesbian people by the public and medical health professionals.

A recent study by Douglas, Kalman and Kalman (1985)³ investigated, "whether the AIDS epidemic ... activated underlying anxieties and fueled negative attitudes about homosexuality in a group of health professionals working with AIDS patients (p. 1311)". They gave a 21 item questionnaire to 91 interns and residents, and 261 registered nurses. Thirty seven physicians and 91 nurses completed the questionnaire. The questionnaire consisted of statements rated on a 5-point scale ranging from 1-'strongly agree' to 5-'strongly disagree'. Individual scores of 50 or above defined homophobic individuals. It was found that the majority of doctors and nurses in the sample had mean scores which fell in the low grade homophobic range. Approximately 31 percent of the study group said that they felt more negatively towards homosexuality since the outbreak of the AIDS epidemic. More than 9 percent agreed with the statement: "homosexuals who contract AIDS are getting what they deserve (p. 1310)". Having a close friend or relative who was gay was found to significantly reduce anxiety towards homosexuals. Yet, it was found that, "a disturbingly high percentage of health professionals ... acknowledge

more negative, even overtly hostile, feelings towards homosexuals than they had before the emergence of the AIDS epidemic (p. 1311)".³

Another study investigating the attitudes of nurses working with AIDS patients has shown similar results. Blumenfield et al (1987)⁴ found that, "between one quarter and one half of the nurses have a fear of caring for homosexual men ... because of AIDS". It was also revealed that almost half the nurses surveyed reported that they would ask for a transfer if they had to care for patients with AIDS on a regular basis.

Method

The purpose of the following study was to determine the attitudes of first year medical students towards the AIDS patient before any clinical exposure to AIDS patients had occurred, and to investigate if these feelings were related to attitudes towards homosexuals. The method of study was a fifteen question survey which included topics such as; general knowledge of the transmission of the AIDS virus, possible feelings the students would have towards an AIDS patient, the availability of adequate health care to AIDS patients, and attitude towards homosexuals. Most of the questions were forced-choice with some questions which gave respondents space to explain their comments or to elaborate on issues such as homosexuality.

Results

Surveys were given to 204 students and 169 responses were completed and returned. Of the 169 respondents, only 3 students knew someone with AIDS. The responses to ten of the questions are summarized in Table 1. One hundred and seventeen students did not believe the common folk myths that AIDS could be spread by drinking from a glass, or using a public toilet or a handshake and so forth. Fifty six percent of the students were afraid of contracting the AIDS virus from a future patient.

Of the students that thought AIDS patients were not receiving the best treatment possible (Question 6), 53 percent blamed the lack of care on the fears of society and health professionals and homophobic attitudes. Twenty two percent believed that government bureaucracy and lack of funding was preventing adequate care. Forty one percent of the students acknowledged the fact that they would not use the washroom

Table 1

Statement or Question	Percent of students giving each response				
1) What would be your initial emotional reaction to a patient of yours who was found to have AIDS?	Empathy 53%	Anxiety 23%	Fear 12%	Disgust 4%	Other 8%
2) Would you examine an AIDS patient if asked to?	Yes without hesitation 34%	Yes but with hesitation 59%	Refuse examination 5%		
3) Before going into an AIDS patient's room, would you ask to be robed, gloved and masked?	Yes 20%	No 49%	Other 31%		
4) Most of the people who get AIDS are homosexuals.	Agree 82%	Disagree 16%			
5) Is AIDS research receiving enough funding?	Yes 46%	No 43%	Other 11%		
6) In your opinion are AIDS patients receiving the best possible treatment?	Yes 32%	No 21%	Don't Know 45%		
7) Would you use the washroom of a person known to have AIDS?	Yes 54%	No 41%			
8) Patients who have AIDS should receive more care and support from health care professionals —	but I don't want to get involved 32%	and I would like to get involved 53%	Other 15%		
9) Would you be willing to donate your services to an AIDS hospice?	Yes 36%	No 50%	Other 14%		
10) AIDS is the just reward for a gay lifestyle.	Strongly agree 5%	Somewhat agree 17%	Somewhat disagree 12%	Strongly disagree 52%	Other 14%

of a person known to have AIDS (Question 7) even though only 4 students out of the 169 surveyed (2 percent), believed that AIDS could be contracted from a toilet seat.

Of the group of students that would refuse to donate their services to an AIDS hospice (Question 9), 52 percent would not volunteer because of lack of interest, 20 percent because they were fearful of contracting the disease, 6 percent because they didn't want to work with gays and 27 percent were not willing to give an explanation.

When asked what they would do if a close friend, family member or other loved one developed AIDS, 50 percent of the respondents admitted that their relationship with the person would change. Out of this group 20 percent thought that their fear of contracting the virus would prevent the relationship from being as close as it once was, whereas 6 percent stated that the relationship might get closer, but only if the loved one did not develop AIDS through homosexual activity.

Of the 138 students who commented on their attitudes toward homosexuality 21 percent moderately disapproved of the lifestyle, while 22 percent strongly disapproved. Of this latter group 34 percent either strongly agreed or somewhat agreed to the statement "AIDS is the just reward for a gay lifestyle". It should be noted that 18 percent of the respondents refused to describe their feelings towards gay and lesbian people.

Discussion

A large population of the first year medical class of the University of Toronto exhibit homophobic attitudes. Douglas, Kalman, and Kalman, (1985)¹ define homophobia as, "the constellation of affective res-

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ponses, including fear, disgust, anger, discomfort and aversion, that individuals may experience in contacts with homosexuals (p. 1309)". The number of overtly hostile feelings toward homosexuals was alarmingly high. A few examples include the following statements: homosexuals are "damned in hell", "social maggots, deport them or face social ruin", "give them all AIDS", "exile them", "fucking abnormal humanoids" as well as other similar comments.

It was found attitudes toward gay and lesbian people were related with the acceptance of the idea that AIDS and the inevitable death created by it was what homosexuals deserved. As one student wrote: "Homosexual activity is not natural. Whenever we act against nature there is bound to be a recoil since nature cannot be bent". Krener (1987)⁵ has hypothesized that, "care-takers of patients with AIDS may normally have feelings considered unacceptable in medical settings, including fear, blaming the patient, or a wish to avoid the patient". Such attitudes in medical students have implications for patient care. The central issue for medical practice is whether a nonconformist lifestyle should influence the equitable delivery of health care services.

When faced with the decision of examining a patient known to have AIDS, most students stated that they would do it, but with hesitation. There was a strong fear of transmission of the AIDS virus. Even though 69 percent of the respondents believed that AIDS could not be contracted through common everyday contact, fear of spread still exists. This contradiction was seen in the fact that only 4 people out of the 169 surveyed believed that AIDS could be spread through a toilet seat, but 41 percent would not use the washroom of an AIDS patient. Another representation of this fear was revealed by the fact that even when family members and other loved ones contract the AIDS virus, 20 percent thought that the relationship would become more distant for fear of transmission.

This study investigated medical student perceptions of the AIDS patient. The vast majority of the study sample had no exposure to patients with AIDS, but over half the students surveyed were fearful of such contact in the future. With the increasing incidence and prevalence of AIDS, it is very likely that students currently in first year medicine will be asked to examine AIDS patients in their clinical rotations. There is little in the curriculum to address their anxieties and prejudices not only toward homosexual patients but also towards homosexual or heterosexual patients who have AIDS. Whether their attitudes will be modified by patient contact and interaction remains to be seen.

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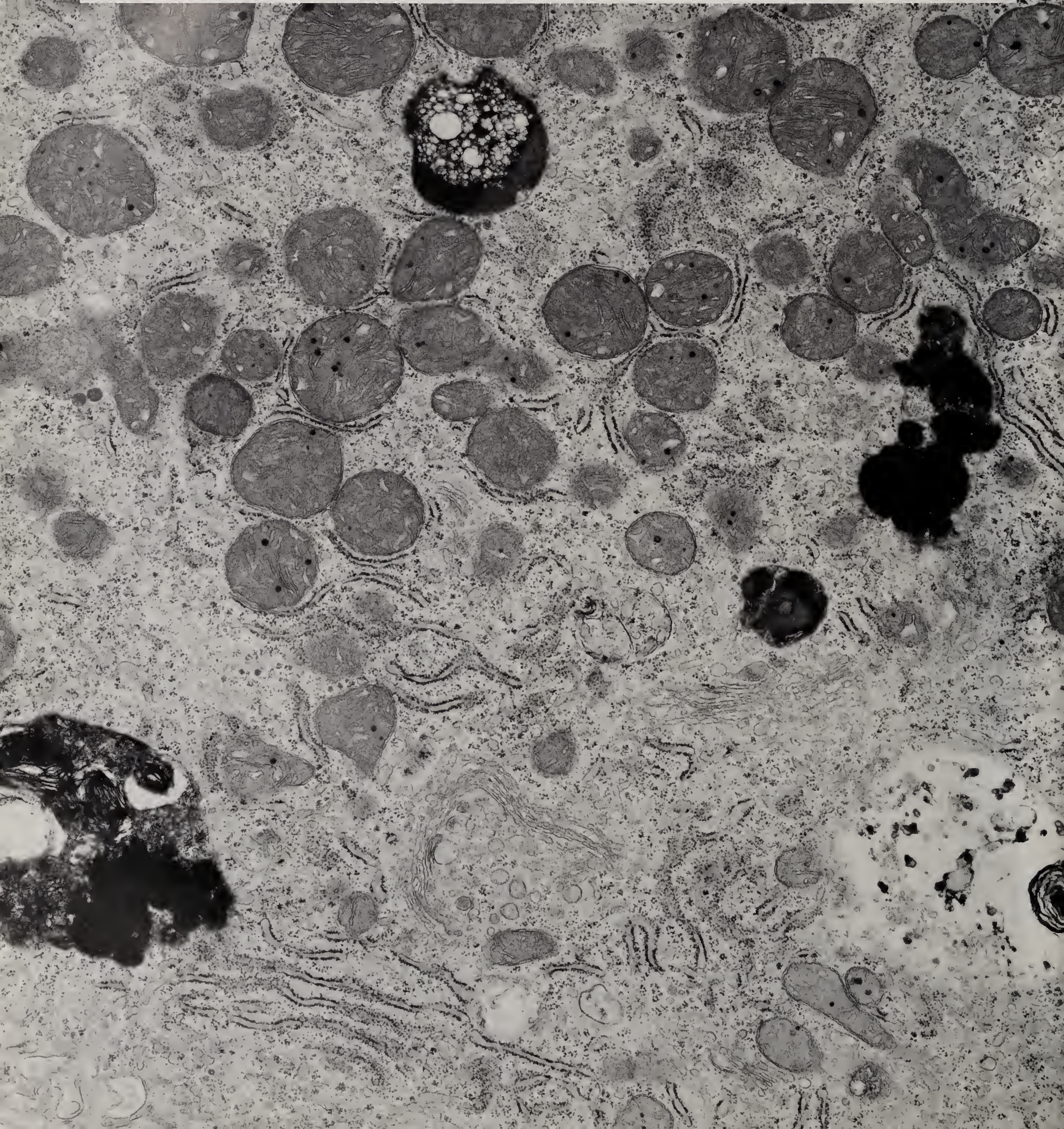
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A Case of Wilson's Disease Presenting as Fulminant Hepatic Failure and Hemolytic Anemia

Joel A. Finkelstein, B.Sc., 8T8 and Paul. D. Greig, M.D., F.R.C.S.(C)

Figure 4: The electron micrograph shows intralysosomal copper deposits and a prominent lipolysosome. There is widespread enlargement and variation in the shape of the mitochondria and the cristae are disordered with terminal microcystic formations. Coarse dense deposits possibly representing copper are seen within the mitochondrial matrix.



Abstract

Wilson's Disease is an autosomal recessive defect in copper metabolism, with many associated serious problems. This paper presents a case history, discusses the pathophysiology of the disease, and reviews current treatment options.

Introduction

Wilson's disease, or hepatolenticular degeneration, is a rare disorder of copper metabolism. It is inherited as an autosomal recessive trait with worldwide prevalence of 1 per 200,000.¹ The basic abnormality remains undetermined but there appears to be a lysosomal defect in hepatic copper metabolism which results in impaired biliary excretion of copper.² The homozygous young patient may be asymptomatic or may present with a spectrum of neurologic, hepatic, hematologic, renal, osseous, and/or arthritic dysfunctions. The heterozygous carrier of the Wilson's disease gene never suffers from the illness but may manifest some of the biochemical characteristics of the homozygote.¹

Wilson's disease usually presents as neurologic dysfunction or as liver disease with or without hemolytic anemia and Kayser-Fleischer rings. Any of these features may be absent and occasionally ceruloplasmin and serum copper can be normal.³ Early treatment with oral penicillamine will chelate the copper, reverse many of the neurologic and hepatic symptoms and avert the disease. Prognosis with early treatment is excellent.⁴ However, the diagnosis of Wilson's disease may be delayed, and once cirrhosis is established the prognosis is poor despite oral penicillamine therapy. The following case report demonstrates a patient with Wilson's disease presenting at age 18 with fulminant hepatic failure and hemolytic anemia.

Case Report

An 18-year-old female, previously in good health, developed jaundice 24 hours prior to her admission to hospital. The patient had felt unwell for the previous two and a half months noting progressive fatigue, lethargy and anorexia. In the week prior to admission, she noted her urine to be bright orange and her stools to be pale in colour. There was one episode of nausea and vomiting. She was a non-smoker and on no medications. Her past history was unremarkable except for mononucleosis at age 12.

Physical examination revealed an acutely ill young woman with deep jaundice and scleral icterus. The vital signs were normal, she was afebrile and mildly confused but there was no tremor, rigidity nor any behavioural or psychiatric changes. The abdomen was distended and a fluid thrill was present. There was right upper quadrant tenderness with a normal liver span; the spleen tip was palpable. The initial laboratory results were as follows: Hemoglobin 90 g/l; white blood cell count 18,500/cu. mm. (73% neutrophils, 15% lymphocytes, 12% monocytes). Peripheral smear revealed spherocytes, basophilic stippling and reticulocytosis. The platelet count was 185,000/cu. mm.; serum creati-

nine 233 $\mu\text{mol/l}$; total protein 62 g/l (65-80 g/l); albumin 30 g/l (40-80); globulin 31 g/l (20-32); bilirubin, total 558 $\mu\text{mol/l}$ (<25.6); direct 462 $\mu\text{mol/l}$; AST 177 units/l (<35); ALT 13 units/l (<29); alkaline phosphatase 295 units/l (<95); prothrombin time 17 secs. (control 12); partial thromboplastin time 46 (control 27). The working diagnosis at this time was infectious hepatitis.

Forty-eight hours after admission the patient became markedly dyspneic. The blood pressure was 82/40; heart rate 72/min; respiratory rate 18/min; and the temperature was 38°C. The hemoglobin had fallen to 47 g/l. There was no evidence of any external blood loss; urinalysis revealed hemoglobinuria and repeat peripheral blood film showed poikilocytes, spherocytes and burr cells. The diagnosis of Wilson's disease was made based on the findings of acute liver failure and hemolytic anemia. The patient was transfused and parameters of copper metabolism were measured: the serum copper was 35.5 mmol/l (11-24.4); ceruloplasmin 334 mg/l (150-600). She was transferred to the Toronto General Hospital for further evaluation and management.

Further investigations revealed bilateral corneal copper deposits (Kayser-Fleischer rings); abdominal ultrasound demonstrated ascites and mild splenomegaly. At the time of transjugular liver biopsy, the wedged hepatic vein pressure was 27 mmHg, and the corrected sinusoidal pressure was 17 mmHg indicating mild portal hypertension. The biopsy showed severe chronic active hepatitis with fibrosis, and copper was seen mostly within the lysosomes (Fig. 1). Serum for hepatitis A and B antibodies and for alpha-1-antitrypsin were negative. The diagnosis of Wilson's disease with fulminant hepatic failure and hemolytic anemia was confirmed. The patient was placed on the emergency liver transplant list and awaited a suitable organ.

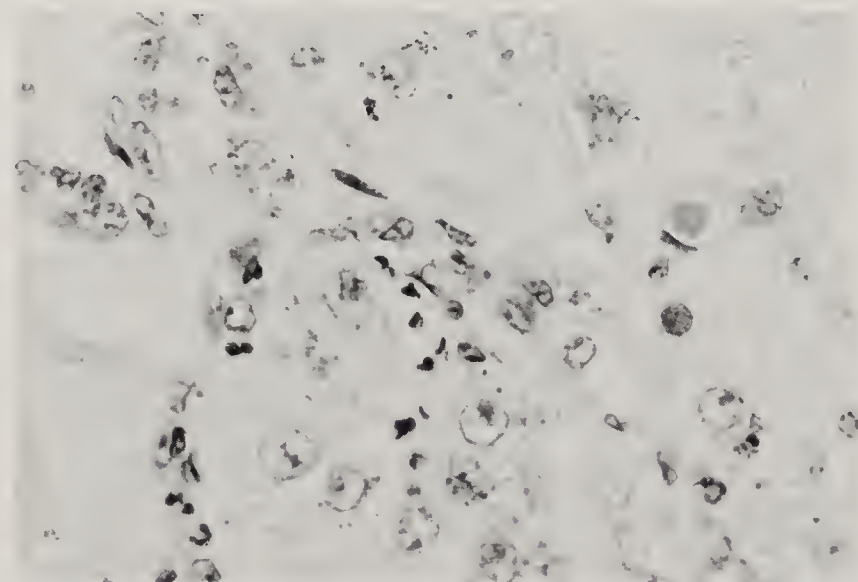


Figure 1: Copper is seen in the hepatocytes predominantly within the lysosomes. (Rhodanine stain)

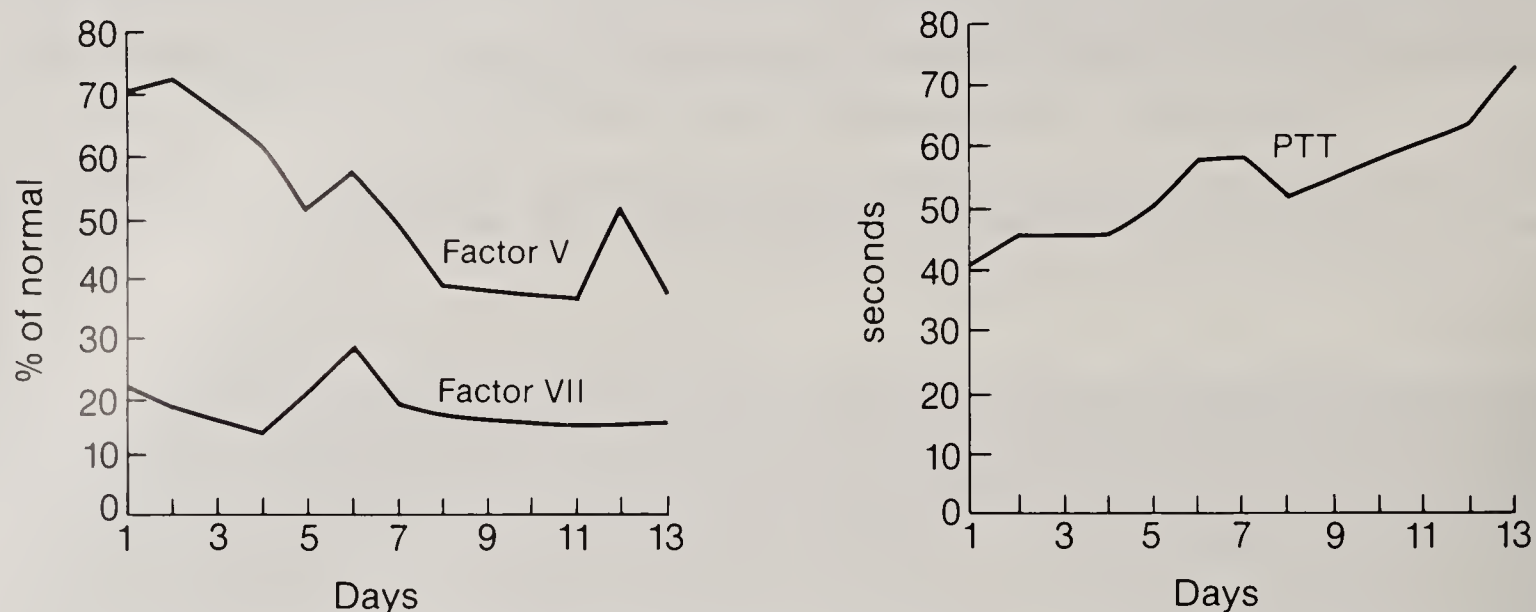


Figure 2: The progressive coagulopathy is seen in this patient by the decreasing activity of clotting factors v and vii (%), and by the rising partial thromboplastin time (secs.)

She responded to intensive supportive therapy; the hemoglobin was maintained with transfusions of packed red blood cells and the acute renal failure was reversed with rehydration. Specific treatment for Wilson's disease was started with oral penicillamine 500 mg bid and a copper free diet. Within 48 hours the hemolysis had resolved. Clinically the patient was improved with decreasing ascites and no evidence of encephalopathy. However, hepatocellular function continued to deteriorate as evidenced by a progressive coagulopathy. Clotting Factor V fell to less than 40% of normal activity and Factor VII was persistently less than 20% of normal activity (Fig. 2). Prothrombin and partial thromboplastin times rose to 27 and 65 seconds respectively. Since the patient had decompensated liver failure an orthotopic liver transplant was felt to be the only alternative and potentially curative therapy. On day 17 a suitable donor was found and liver transplantation using veno-venous bypass was performed.

The post-operative course was unremarkable. The PT/PTT at day 5 were within normal limits and the total bilirubin returned to normal at day 10 postoperatively. On day 20 she was discharged from hospital on prednisone 20 mg/day, cyclosporin A 350 mg qid, zantac 150 mg/day and septria for prophylaxis against pneumocystis carinii.

Discussion

Wilson's disease of childhood can mimic all forms of liver disease. Early diagnosis is often difficult unless a high index of suspicion is maintained. The other causes of childhood liver disease, HB and HAV infection, post-hepatic cirrhosis and alpha-1-anti-trypsin deficiency must be ruled out. Onset of symptoms is usually after age six. Prediagnostic symptoms are non-specific and include lethargy, jaundice, abdominal pain, distention and mental and physical deterioration.⁴ Death can result from hepatic coma, gastrointestinal hemorrhage, fulminant hepatic failure, severe coagulopathy or hemolysis.³

The hemolytic crisis in Wilson's disease is attributable to an acute inflammatory reaction with massive

release of copper from the hepatocytes.⁵ The circulating copper is toxic to red cell oxidative mechanisms.⁶ In most instances when hemolysis occurs together with hepatic decompensation, rapid deterioration ensues and liver transplantation may be the only treatment to avert the continuing hemolysis.⁷ The patient reported here overcame this acute event but did go on to liver transplantation due to persistent acute hepatic failure.

Wilson's disease rarely presents as fulminant hepatic failure, and consequently it is not always considered in the differential diagnosis.⁸ The present patient displays a biochemical profile that McCullough et al. have described as diagnostic for Wilson's disease presenting as fulminant hepatic failure: a very high bilirubin, low hemoglobin with intravascular hemolysis, elevated serum copper and mild transaminase elevations.⁸ As seen in this patient, and as noted previously, serum ceruloplasmin is often within normal range especially if there is severe hepatocellular necrosis.³

The liver biopsy showed cirrhosis with a predominantly macronodular pattern with fibrosis and regenerative nodules. (Fig. 3) Grossly it cannot be distinguished from cirrhosis due to other etiologies. Special stains can demonstrate copper in the cytoplasm of

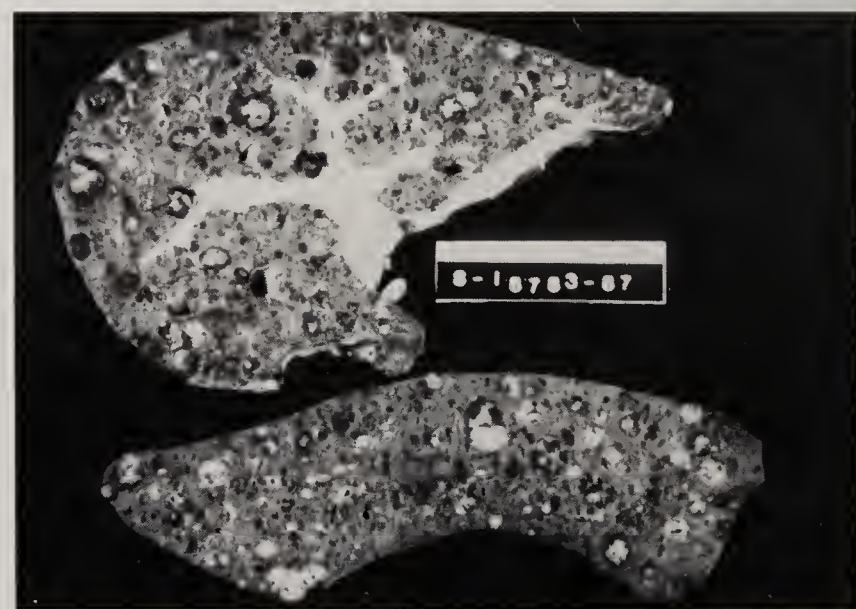


Figure 3: The gross pathology of the liver demonstrates macronodular cirrhosis with fibrosis and regenerative nodules.

hepatocytes, in macrophages and intralysosomally. The hepatic ultrastructural changes include mitochondrial abnormalities which appear to be unique to Wilson's disease.² (Fig. 4)

In the treatment of chronic Wilson's disease or the neurologic syndrome due to Wilson's disease, oral penicillamine is the treatment of choice. Penicillamine chelates serum copper and normal kidney function allows for excretion of this complex. In the presence of renal failure, hemodialysis may be required.⁹ If therapy is not begun before decompensated cirrhosis develops, or in the situation of fulminant hepatic failure, liver transplantation is the treatment of choice and provides a potential cure for Wilson's disease.¹⁰ Screening of siblings and other relatives for asymptomatic homozygous disease allows for treatment prior to onset of subtle neurological symptoms and liver function deterioration.¹¹

Summary

This case report describes a patient with Wilson's disease presenting with fulminant hepatic failure and an acute hemolytic crisis. The diagnosis was confirmed quickly after initial presentation based on pathognomonic clinical, biochemical and histological findings, and the patient underwent orthotopic liver transplantation. Unfortunately some of these findings may be absent in some patients and the diagnosis may be delayed or missed. Early diagnosis is important since oral penicillamine can control the progress of the disease and hepatic transplantation offers a cure for acute hepatic failure or chronic end-stage Wilson's disease. Finally a definite diagnosis compels the physician to screen the siblings and other relatives for possible asymptomatic Wilson's disease.

Acknowledgement

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Lifesaving Ocular Signs

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Abstract

Clinicians should be able to recognize specific ocular signs that if detected can lead to lifesaving medical and/or surgical intervention. A detailed understanding of these oculo-systemic syndromes will enable the physician to initiate appropriate systemic investigations to rule-out non-ocular malignancies.

Introduction

Many systemic diseases are associated with specific findings in the eye. It is, therefore, important that the general physical examination include an examination of the structures of the eye, including visualization of the fundus. This paper reviews four such conditions — aniridia, Von Hippel-Lindau disease, MEN II b, and Gardners Syndrome — and discusses the inheritance pattern, systemic findings, and workup appropriate for each.

Aniridia

Aniridia is a genetically determined condition characterized by apparent absence of the iris. In certain cases, aniridia may be associated with Wilms' tumor which



MEN IIb:

Photograph showing a neurofibroma of the palpebral conjunctiva in a patient with Multiple Endocrine Neoplasia type II b. (photo courtesy of Mayo Medical School, Department of Ophthalmology.)

comprises Miller's syndrome. Patients with aniridia possess multiple congenital ocular anomalies as well as dystrophic changes which progress from early childhood.¹

Inheritance Pattern:

Two forms of inheritance are known to exist. Approximately two-thirds of patients with congenital aniridia are of the autosomal dominant type while the remainder are sporadic cases.

Clinical Manifestations and Diagnosis:

Externally, the iris appears to be completely absent. (Plate 1). However, with the technique of gonioscopy, in which the structures in the angle of the anterior chamber are visualized, it is apparent that there is a residual iris stump in all eyes. The iris deformity is always bilateral.

Nearly all patients with aniridia possess visual problems. Visual acuity is usually markedly decreased ($20/100$ to $20/400$) due to an associated foveal hypoplasia. About 50 percent of patients develop progressive glaucoma, which characteristically develops in childhood.

Aniridia in the newborn is very obvious and thus the diagnosis is seldom missed. This diagnosis is important to make, not only because of the high risk of glaucoma, but also because of the risk of associated Wilms' tumor (Figure 1) in certain sporadic cases in aniridia. In those sporadic cases in which there is deletion of the short arm of chromosome eleven, there is about a 90 percent risk of developing Wilms' tumor.³ The risk in sporadic cases without any detectable deletion is approximately 20 percent. In contrast, familial cases of aniridia are believed to be at no increased risk for the development of Wilms' tumor compared with the general population.

In sporadic cases of aniridia, the Wilms' tumor usually presents before the age of 4 years old.⁴ Early diagnosis and treatment of the tumor can be lifesaving.

Workup:

Chromosomal analysis is indicated in the evaluation of all patients with aniridia, and is mandatory in sporadic cases under 10 years of age. The family doctor or pediatrician must be alerted to the risk of Wilms' tumor developing. All children with aniridia must undergo careful physical examination, including measurement of blood pressure, on a regular basis. Developmental evaluation and examination for other congenital anomalies should also be carried out. Renal ultrasonography should be performed every three months for patients with chromosomal deletion, and at least every six months for sporadic cases without a detectable chromosome defect.

Von Hippel-Lindau Disease

Inheritance Pattern:

Von Hippel-Lindau (VHL) disease is an inherited autosomal dominant disorder with variable penetrance. Any child born to an affected parent has a 50 percent chance of being afflicted with the disease.

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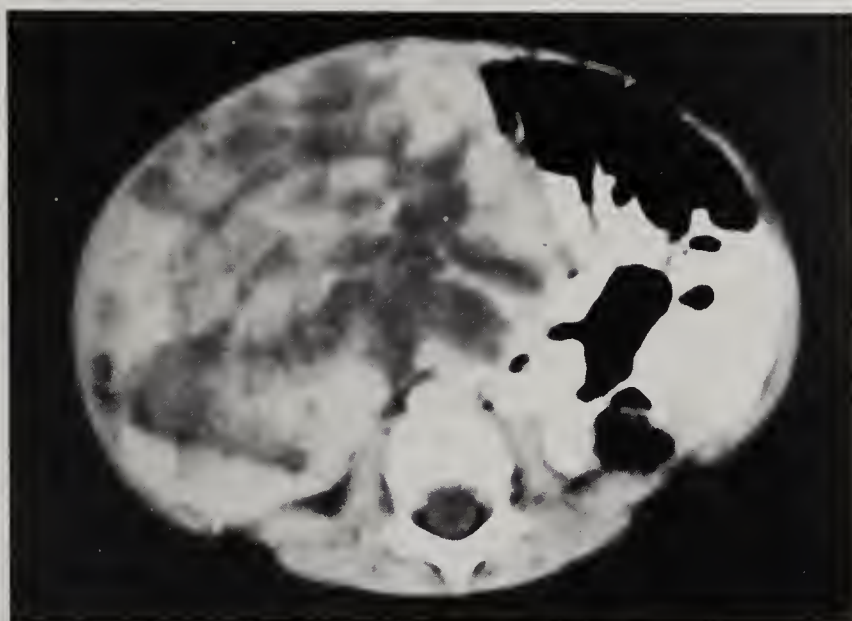


Figure 1: ANIRIDIA
CT scan of the upper abdomen showing a Wilms' tumor in the right kidney of a 22-month-old male infant with sporadic aniridia.

Clinical Manifestations & Diagnosis:

In VHL disease, characteristic retinal angiomas ("angiomas retinae") are associated with lesions elsewhere in the body. Of the more than 25 distinct lesions that have been identified, six commonly produce significant morbidity. These are: angiomas retinae; cerebellar, medullary, and spinal hemangioblastomas; renal cell carcinoma; pheochromocytoma.⁵⁻⁷ (Table 1). VHL disease is often lethal, with cerebellar hemangioblastoma (Figure 2) (the most common brain tumor associated with this disease) and renal cell carcinoma being the most common causes of death.

Angiomas retinae (Plate 2) is often the first observed manifestation of VHL disease.^{5,6,8} Early recognition of this lesion may allow earlier detection and management of other potentially lethal but treatable manifestations (eg. renal cell carcinoma) of VHL disease, thus minimizing patient morbidity and mortality.



Figure 2: VON HIPPEL-LINDAU DISEASE
MRI showing a hemangioblastoma of the right cerebellar hemisphere in a patient with Von Hippel-Lindau disease.

Angiomas retinae is a condition characterized by one or more capillary hemangiomas of the retina, which are associated with dilated tortuous afferent and efferent feeder vessels. The large afferent artery is seen extending from the disc to a pinkish colored vascular mass. From this tumor, an engorged vein leads back to the disc. The most common site is in the temporal retinal periphery near the equator. Less commonly, retinal angiomas may be found in the posterior pole near the macula or adjacent to the disc.

Retinal angiomas are bilateral in approximately 40 percent of cases. Multiple angiomas occur in about 33 percent of cases. These angiomas have a progressive course of enlargement, leakage or rupture, producing serious ocular and peri-ocular complications. These include lipid exudation with lipid accumulation in the macula, retinal and vitreous hemorrhages, retinal detachment, retinitis proliferans, retinal scarring, secondary glaucoma and eventually visual loss.

Angiomas retinae is frequently asymptomatic when diagnosed. While eye symptoms usually become manifest in the late teens or 20's, they may do so at any age.⁸ An untreated lesion can lead to blindness and enucleation.⁹

The poor visual prognosis associated with the complications of retinal angiomas necessitates early recognition and treatment. These angiomas should be treated with laser photo coagulation or cryotherapy, and the patient must be observed regularly, because with time, new retinal lesions can develop.^{8,9}

Work Up:

Because the retinal tumor is among the earliest recognizable manifestations of VHL disease, the ophthalmologist may be the first physician to encounter VHL patients. For surveillance of suspected VHL victims, a

Table 1:
Important Pathologic Lesions in
Von Hippel-Lindau Disease.⁸

Site	Pathologic Lesion
Retina	Angiomas Retinae
Central Nervous System*	
Cerebellum	Hemangioblastoma
Medulla Oblongata	Hemangioblastoma
Spinal cord	Syringobulba
	Hemangioblastoma
	Syringomyelia
Important Viscera**	
Pancreas	Hemangioblastoma
Kidney	Clear cell carcinoma
	Hemangioblastoma
Adrenal Medulla & Sympathetic Chain	Pheochromocytoma
Epididymis	Paraganglioma

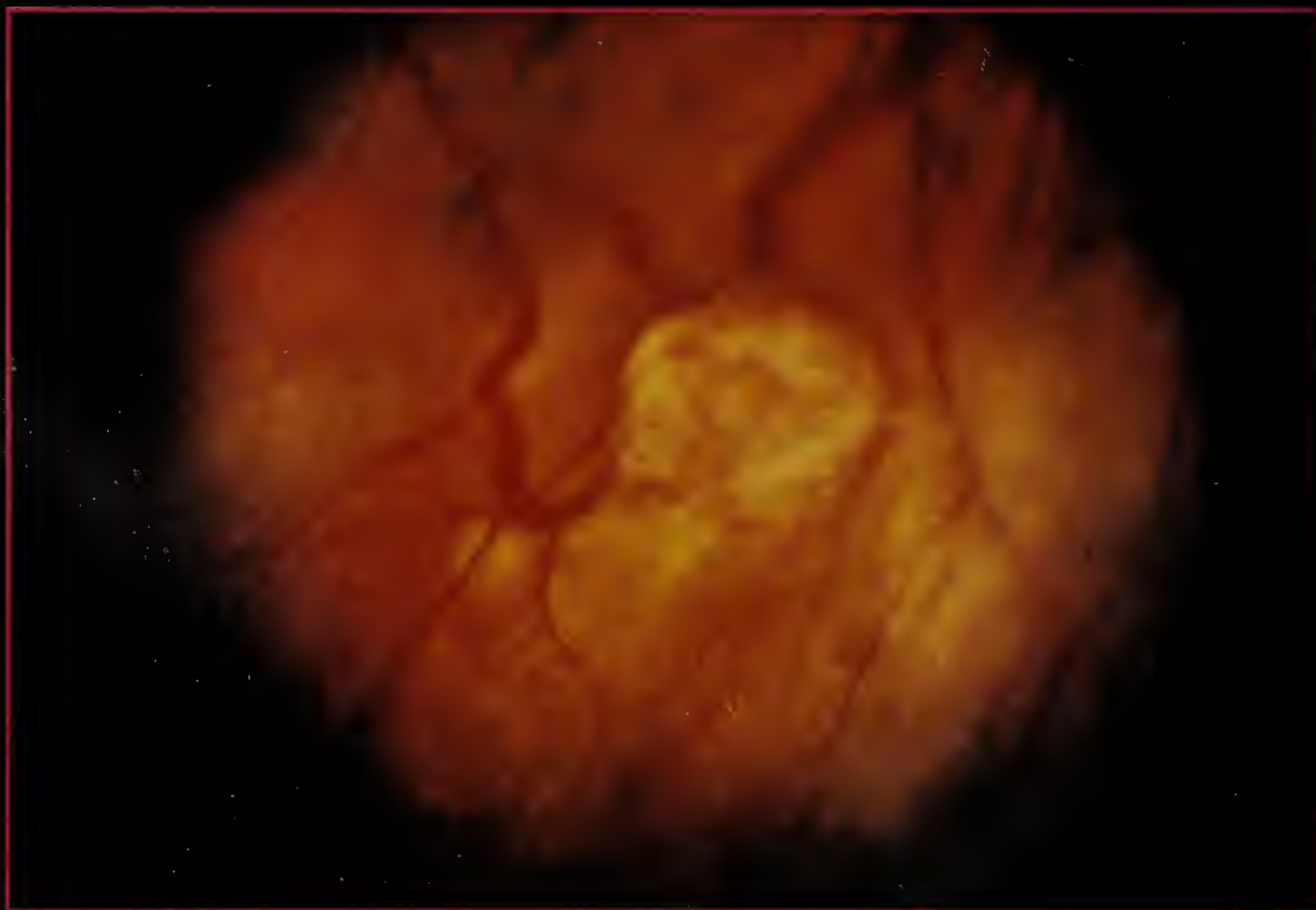
* Usually below the tentorium

** Cyst and/or adenoma are lesions common to all

Plate 1: ANIRIDIA
 Apparent absence of the
 iris allowing easy visibility
 of a cataract (grey,
 granular area).
 (Courtesy of the Mayo
 Clinic, Department of
 Ophthalmology)



Plate 2: VHL DISEASE
 The fundus of a patient
 with VHL disease
 showing a yellowish-pink
 retinal angioma
 associated with dilated
 feeder vessels.
 (Courtesy of the Mayo
 Clinic, Department of
 Ophthalmology)



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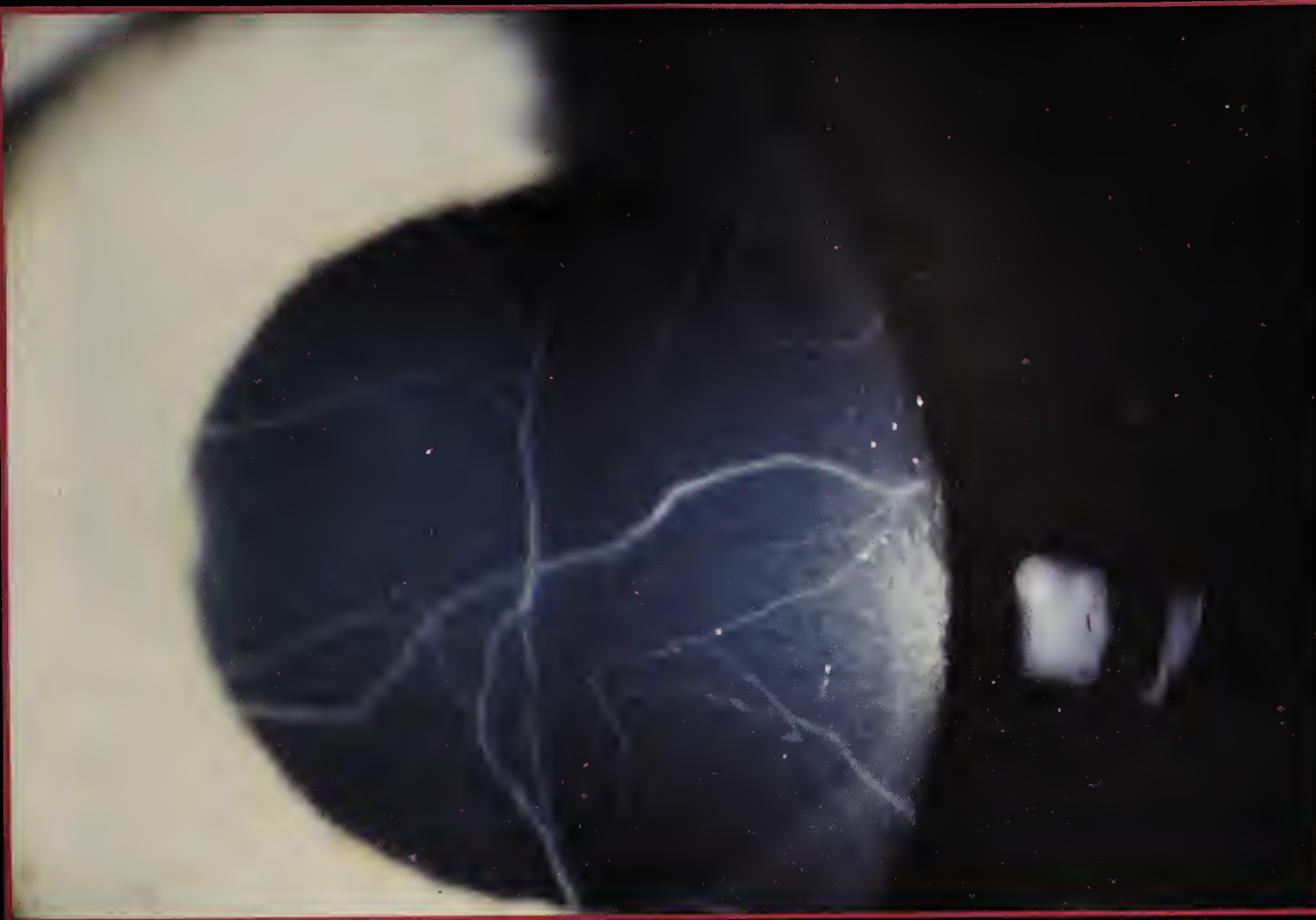


Plate 3: MEN IIb
Prominent corneal nerves
in a patient with multiple
endocrine neoplasia type
IIb.
(Courtesy of the Mayo
Clinic, Department of
Ophthalmology)



**Plate 4: GARDER'S
SYNDROME**
Large area of
hypertrophy of the retinal
pigment epithelium
showing grayish-brown
pigmentation with a few
areas of
hypopigmentation.
(Courtesy of the Mayo
Clinic, Department of
Ophthalmology)

detailed family history and retinal examination are required. Essential laboratory tests include a complete blood count, urine evaluation for catecholamines, and CT scans of the head, upper cervical region, and abdomen.⁸ The discovery of associated silent lesions will help establish the diagnosis, estimate the prognosis, provide an opportunity for early lifesaving surgical intervention, as well as aid in genetic counselling. Periodic presymptomatic screening is important both for follow-up investigation of affected persons, to determine possible additional occult manifestations, as well as for non-affected family members at risk for VHL disease.⁸

Because VHL disease may not become evident until early adulthood (due to the silent nature of several diagnostic lesions) affected patients may already have had children before being diagnosed. Early genetic counselling is therefore essential for patients and their families.

Multiple Endocrine Neoplasia Type IIb (MEN IIb)

Inheritance Pattern:

MEN IIb is a syndrome of sporadic occurrence or of autosomal dominant inheritance.¹⁰

Clinical Manifestations & Diagnosis:

The disorder consists of medullary carcinoma of the thyroid (Figure 3), parathyroid adenomas, and pheochromocytoma (Figure 4). In addition, affected individuals have striking dysmorphic features such as neuromas of the conjunctiva, labial and buccal mucosa, the tongue, the larynx, and the gastrointestinal tract. Other characteristic findings include thick lips, soft tissue prognathism, marfanoid habitus and facies, and the presence of characteristic prominent corneal nerves in an otherwise normal cornea.¹¹ (Plate 3)

In normal individuals, nerve trunks pierce the cornea at the middle one third of its thickness. The nerves lose their myelin sheath after traversing 0.5-2.5mm into

Figure 3: MEN TYPE IIb

Ultrasound showing a medullary carcinoma of the right lobe of the thyroid gland in a patient with multiple endocrine neoplasia (outlined area).

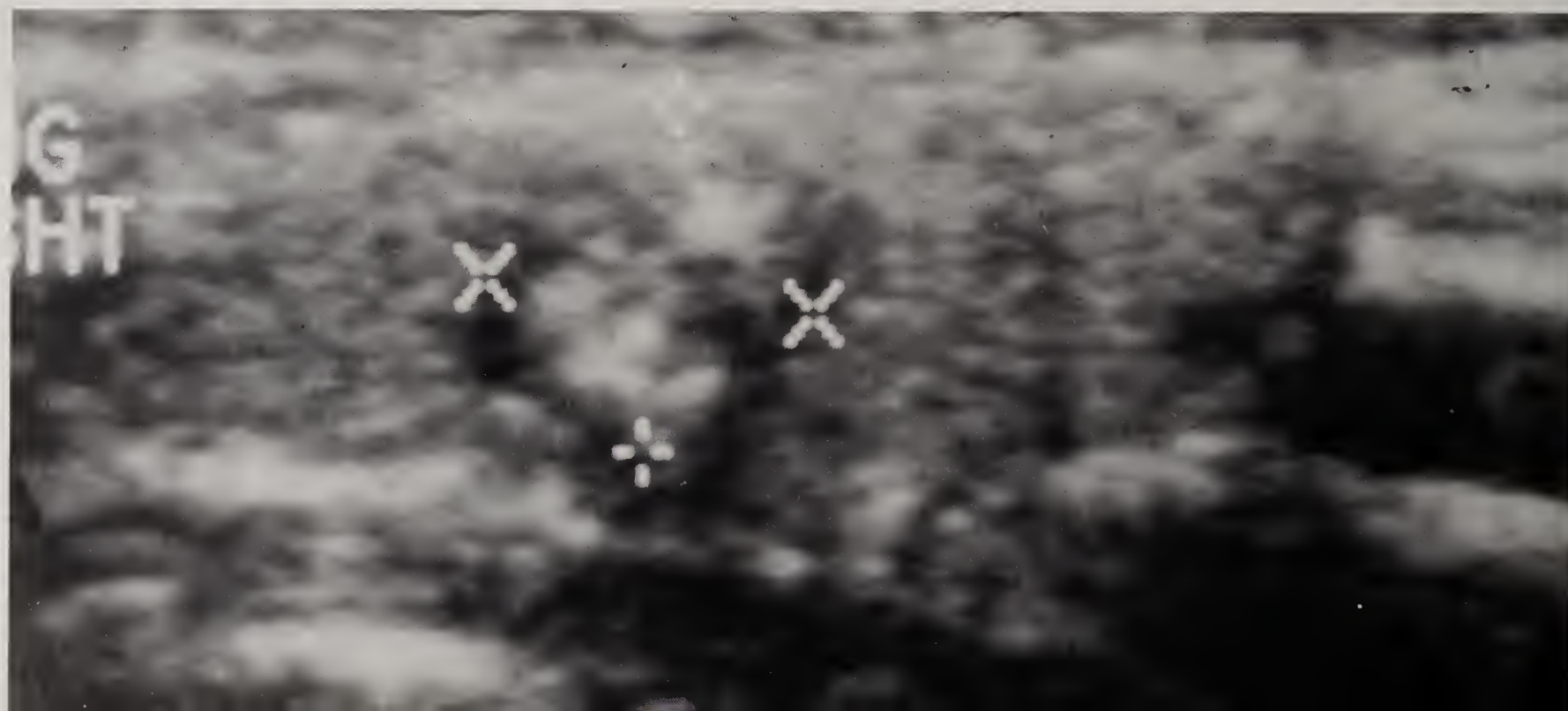


Figure 5: GARDNER'S SYNDROME

Barium enema showing multiple adenomatous colonic polyps in a patient with Gardner's syndrome.

the cornea and then continue as transparent cylinders.^{11,12} In MEN IIb, however, the thickened corneal nerves are relatively large in size and form a visible irregular lattice pattern across the entire cornea. The corneal nerve fibers are seen entering the midstroma as large white trunks, while small branches enter the anterior and posterior stroma. Enlarged nerves may also be seen in the subconjunctival region where they raise the overlying tarsal or bulbar conjunctiva. These lesions may be yellow, smooth, and elevated within the palpebral fissure, sometimes resembling pingueculae.^{11,13}

Other ophthalmic findings in MEN IIb include: thickened eyelids, prominent eyebrows, nasal displacement of the lacrimal puncta, decreased tear production, impaired pupillary dilatation, prominent perilimbal blood vessels, and thickened nerves in the iris.^{11,13}

The presence of thickened corneal nerves in an otherwise normal cornea should alert the physician to the possibility of MEN IIb. In fact, the ophthalmologist may be the first physician to have the opportunity of making a diagnosis of MEN IIb.

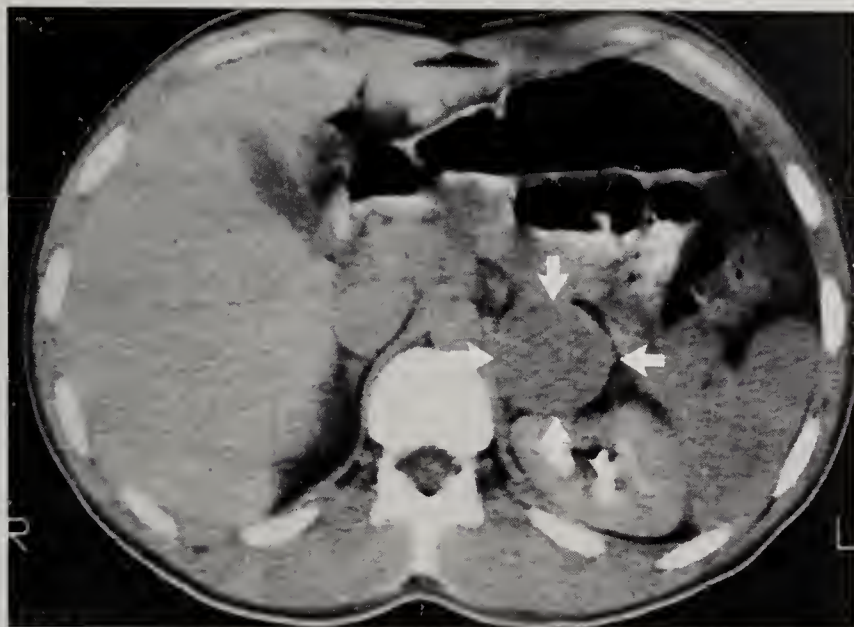


Figure 4: MEN TYPE IIb
CT scan of the upper abdomen shows a mass in the left adrenal gland representing a pheochromocytoma (arrows).

Work Up:

Investigation for medullary thyroid carcinoma, parathyroid adenomas, and pheochromocytomas must be carried out. Measurement of serum calcitonin concentration is important, as high concentrations are diagnostic for medullary thyroid carcinoma.¹⁴ If a diagnosis of MEN IIb is made, relatives of the index case should be investigated for evidence of the disease.

Gardner's Syndrome

Inheritance Pattern:

Gardner's syndrome is an autosomal dominant inherited disorder.

Clinical Manifestations & Diagnosis:

This disorder is marked by the coexistence of multiple pre-malignant intestinal polyps (Figure 5) (duodenal and colonic) together with benign soft tissue tumors (lipomas, fibromas, sebaceous cysts) and osteomas of the skull and jaw. Other findings may include cortical thickening of long bones, pigmented spots on the limbs and torso, as well as other soft tissue abnormalities.¹⁵ In addition, multiple retinal lesions in both eyes, due to congenital hypertrophy of the retinal pigment epithelium (CHRPE), have been reported in patients with Gardner's syndrome as well as asymptomatic undiagnosed family members.¹⁵

CHRPE in patients with Gardner's syndrome is manifested by well-demarcated, slightly elevated, grayish-brown oval-shaped lesions with a fish tail-shaped hypopigmented area at one or both ends.¹⁵⁻¹⁷ (Plate 4). These lesions may occur anywhere in the fundus.

Patients with Gardner's syndrome generally do not begin to develop colonic polyps until about the age of twenty. These patients may be asymptomatic for years until bloody diarrhea supervenes. With the passage of time, there is a 100 per cent chance of malignant transformation of the polyps.¹⁸

Work Up:

Patients who manifest these characteristic retinal lesions must be investigated for evidence of Gardner's

syndrome. A complete gastrointestinal investigation, including colonoscopy and barium enema, is indicated.¹⁸ If a diagnosis of Gardner's syndrome is made, prophylactic colectomy is indicated because of the potential for malignant degeneration of the colonic polyps.

Summary

This paper has reviewed four important oculo-systemic conditions. The clinician should be able to recognize specific ocular signs that may be the first clue to the diagnosis of a syndrome that includes an underlying non-ocular malignancy. Important ophthalmic signs that are part of oculo-systemic syndromes that have been reviewed are the absence of the iris in aniridia that may lead to the detection of a Wilms' tumor; retinal angiomas in Von Hippel-Lindau disease that may be associated with renal cell carcinoma, pheochromocytoma, and/or hemangioblastomas of the central nervous system; thickened corneal nerves in MEN type IIb that may be associated with medullary carcinoma of the thyroid, parathyroid adenomas, and pheochromocytomas; and congenital hypertrophy of the retinal pigment epithelium that may be part of Gardner's syndrome with its adenocarcinoma of the colon. The physician should be aware of the hereditary patterns of these conditions so that appropriate medical work-ups to rule-out systemic malignancies, and possible genetic counselling be directed not only to the patient but to other family members. Early detection of these syndromes by careful examination of the eye can be literally lifesaving.

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Clarifying the Indications for Tonsillectomy and Adenoidectomy: A Review of the Current Literature

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Abstract

Over the past fifty years medical attitudes on the necessity of removing the tonsils and adenoids have changed drastically. Since the 1930's adenoidectomy and tonsillectomy have been performed less and less frequently. Nevertheless, there is still a strong basis for their performance and the operations continue to be popular. This paper reviews the current literature regarding the accepted indications for tonsillectomy and adenoidectomy.

Introduction

Adenotonsillectomy, commonly called T & A, has long been among the most common major operations performed on children in North America. Yet today the need for tonsillectomy and adenoidectomy is still considered controversial and the operation ranks high in lists of "unnecessary surgery". The first attempts to remove the tonsils dates back as early as 600 BCE.¹ In the preantibiotic era adenotonsillectomy became a routine procedure carried out to treat and prevent serious complications of throat infections such as rheumatic fever and poststreptococcal glomerulonephritis. Later improvements in surgery, anesthesia and perioperative care lowered the morbidity and mortality associated with the procedure and resulted in increased numbers of tonsil and adenoid operations. The popularity and number of adenotonsillectomys peaked in the 1930's and has since followed a gradual decline that stems from the advent of antibiotics, from prejudice against the operation engendered by the view that it was being performed excessively, and from the lack of conclusive evidence to support its benefits.²⁻⁴ Still, today well over 26,000 tonsillectomys and/or adenoidectomys are carried out in Ontario hospitals annually.⁵ Considerable disagreement still exists in the medical community concerning tonsillectomy and adenoidectomy despite the fact that, by using refined indications, the efficacy of the operations has been fairly well, if not yet conclusively, established.^{6,7}

Tonsil and Adenoid Anatomy

Tonsillectomy routinely carried out along with adenoidectomy (T & A) involves the removal of the palatine tonsils and adenoids respectively (Fig. 1). The palatine tonsils consist of epithelium overlying lymphoid follicles forming crypts, which remain active until approximately the fifteenth year of life.⁸ Each tonsil lies in a depression, the tonsillar fossa, bounded by the palato-glossal arch anteriorly, the palato-pharyngeal arch posteriorly, and the superior constrictor muscle laterally on the lateral walls of the oropharynx (Fig. 2). The adenoids or pharyngeal tonsils are also lymphoid tissue aggregates covered by epithelium located in the pharyngeal recess of the posterior nasopharynx (Fig. 2). The palatine tonsils together with the adenoids, lateral pharyngeal bands, and the lingual tonsil make up a collection of lymphoid tissue, encircling the oropharyngeal-nasopharyngeal inlets, called Waldeyer's ring. Here they act as immunologic defenses reinforcing the mucosal immunity of the aerodigestive tract, but also act as a nidus for childhood bacterial and viral infections.⁹



Figure 1: The use of a snare to excise a palatine tonsil dissected from the right tonsillar fossa during a T&A procedure. (Photograph courtesy of Dr. V. Forte, Department of Otorhinolaryngology, The Hospital For Sick Children)

Indications

Tonsillectomy and adenoidectomy, although often considered simultaneously, are two different procedures with separate indications, and should be performed concurrently only when the specific indications for each coexist.¹⁰⁻¹² Thus, when considering the indications for adenotonsillectomy, it must be remembered that there are many instances in which removal of the adenoids or palatine tonsils alone may be the only surgical procedure indicated. The indicative criteria for the removal of the tonsils, adenoids, or both are almost always gathered through a careful history and physical examination of the patient and as a generalization are based on the amount of obstruction and interference these structures offer to the normal physiologic function of the eustachian tubes, choanae and naso-and oro-pharynx.

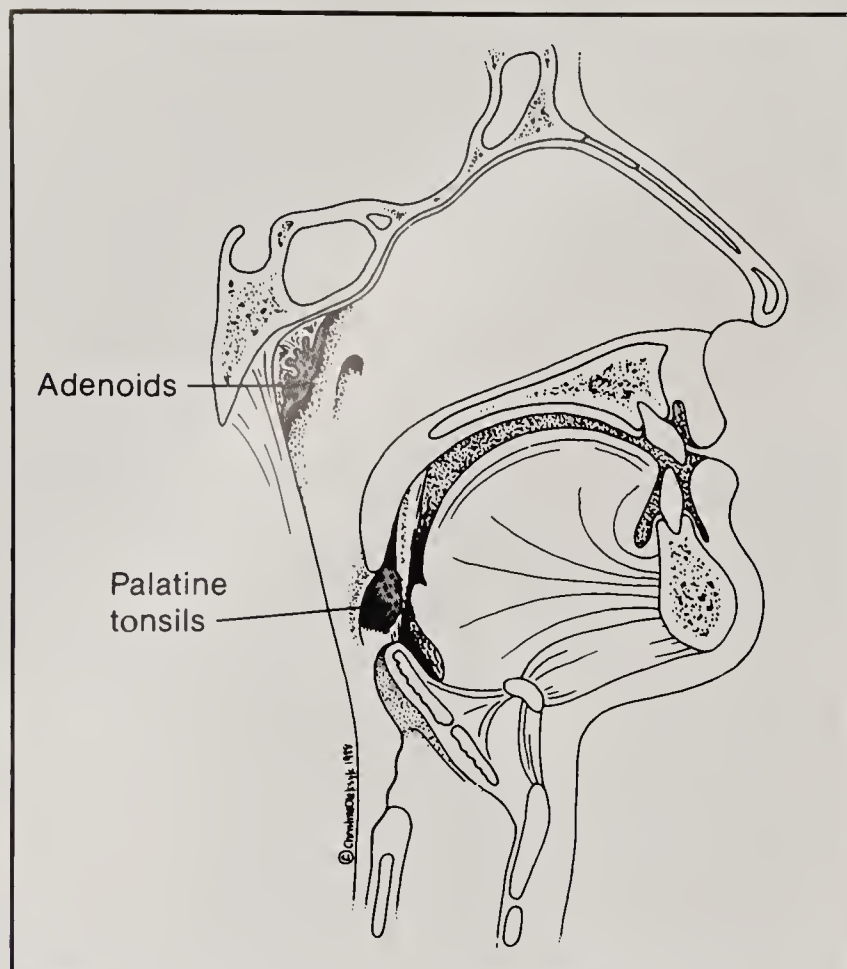


Figure 2: Hemisection of head showing the relative location of the adenoids and palatine tonsils in the naso and oro-pharynx.

Indications for Tonsillectomy

Of the current indications for tonsillectomy (Table 1), the most widely accepted group of criteria are: obstructive tonsillar hypertrophy, suspected tonsillar malignancy, recurrent acute or chronic tonsillitis, tonsillitis with febrile convulsions, and peritonsillar abscesses.

The most universally accepted indication for tonsillectomy is obstructive tonsillar hypertrophy, causing an upper aerodigestive obstruction affecting swallowing and breathing.^{2,6,10-15} This obstruction is caused by the hyperplastic enlargement of the tonsils, and often the adenoids as well, and has been associated with obstructive sleep apnea,¹⁶ hypoventilation, and the development of cor pulmonale if not corrected.^{17,18}

Malignancy of the tonsil suspected by a unilateral tonsillar enlargement, rarely with mucosal ulceration is another indication for tonsillectomy.^{2,10,13} The excised tissue is subsequently microscopically examined and the pathology results are used in the formulation of a treatment plan if necessary.

The most prevalent indications for tonsillectomy are recurrent acute and chronic tonsillitis.^{2,6,10-15} Recurrent acute tonsillitis as an indication for tonsillectomy has been classified as three to four episodes of documented tonsillopharyngitis per year for two successive years, diagnosed by pain, fever and at least one of the following: purulent tonsillar exudates, enlarged tender cervical adenopathy, or positive tonsillar culture for a pathogenic organism - most commonly group A beta-hemolytic streptococci.^{2,7,14} Patients with recurrent chronic tonsillitis also have been shown to benefit from tonsillectomy. They classically present with a persistently sore throat, cervical adenopathy, intermittent

Table 1 Definite and Equivocal Indications for Tonsillectomy and Adenoidectomy

Indications for Tonsillectomy

1. Tonsillar Hypertrophy Obstructing Upper Aerodigestive Tract
2. Recurrent Acute or Chronic Tonsillitis
3. Tonsillitis Resulting in Febrile Convulsions
4. Peritonsillar Abscess
5. Suspected Tonsillar Malignancy

Indications for Adenoidectomy

1. Adenoidal Hypertrophy Obstructing Respiration
2. Nasal Obstruction with Sinusitis, Secondary to Adenoidal Hypertrophy
3. Recurrent Serous Otitis Media, Secondary to Adenoidal Obstruction of Eustachian Tube

Equivocal/Relative Indications for Tonsillectomy and Adenoidectomy

1. Recurrent Sore Throats
2. Recurrent Otagias
3. Recurrent or Chronic Rhinitis
4. Recurrent Upper Respiratory Infections
5. Snoring or Mouth Breathing
6. Failure to Thrive
7. Cervical Lymphadenopathy
8. Systemic Disease, Secondary to β -Hemolytic Streptococcal Infections

fever and peritonsillar erythema. Typically these symptoms disappear with antibiotic treatment but recur several days or weeks after discontinuation of the medication. Also any patient with tonsillopharyngitis experiencing febrile convulsions may be justified as a candidate for tonsillectomy.¹²

Lastly, there is a fairly good consensus in recommending tonsillectomy for the treatment of peritonsillar abscesses (Quinsy).^{2,6,10-14} Peritonsillar abscesses form after bouts of tonsillitis during which the infectious process extends into the peritonsillar space between the tonsillar capsule and the superior constrictor muscle. From here the infection can have potentially lethal complications, spreading via lymphatics, causing thrombophlebitis or extending into the pharyngeal or retropharyngeal spaces.² Peritonsillar involvement may be treated conservatively with antibiotics¹⁴ but bilateral abscesses, especially in children, and cases associated with recurrent tonsillitis should be treated by tonsillectomy to completely eliminate the chances of recurrence and complication.

Indications for Adenoidectomy

Like tonsillectomy, adenoidectomy has several well defined indications (Table 1). Common to all these indications are complications of nasopharyngeal obstruction by adenoidal hypertrophy. Among these indications are the clinical manifestations of adenoidal enlargement leading to airway obstruction, nasal obstruction secondary to obstruction of the posterior nasal choanae, and recurrent serious otitis media

caused by eustachian tube obstruction

Adenoidectomy, along with tonsillectomy, is well recognized as a vital component in the treatment of airway obstruction secondary to adenotonsillar hypertrophy.^{2,6,10-15} As discussed previously this obstruction can cause serious complications if not recognized and treated early.^{16,17,18}

Another definite indication for adenoidectomy is nasal obstruction with sinusitis secondary to adenoid obstruction of the posterior nasal choanae.^{2,10-14} Sinusitis often accompanies the nasal obstruction because of simultaneous obstruction of the sinus ostia by the hypertrophied tissue. Many other medical problems such as nasal polyps, nasal septal deviation, allergic or vasomotor rhinitis, choanal atresia, nasopharyngeal tumors, and intranasal foreign bodies result in nasal airway obstruction and these must be ruled out for accurate diagnosis and effective treatment of this condition by adenoidectomy.²

The third and most controversial of the indications for adenoidectomy is chronic serous otitis media.^{6,14-17,19} This chronic middle ear infection is in many cases thought to be secondary to eustachian tube obstruction by hypertrophied adenoids.²⁰ Eustachian tube obstruction blocks the ventilation of the middle ear space and initiates the reabsorption of air from the middle ear, the production of a partial vacuum and the transudation of fluid into the middle ear space.²¹ Treatment of this problem must be relatively aggressive because of the possible development of chronic complications such as facial nerve paralysis, labyrinthitis, intracranial suppuration, cholesteatomas, and ossicular chain damage²² and because of the deleterious effects that progressive disease can have on language and speech development in children.^{23,24} Although much debate has centered over the treatment of this problem, recent evidence points to adenoidectomy for cases of adenoidal hypertrophy as being among the most efficacious of treatment modalities to date.^{19,20}

Equivocal indications for tonsillectomy and adenoidectomy

The relative or equivocal indications for tonsillectomy and adenoidectomy (Table 1) have been very controversial. These relative indications for surgery vary greatly, emphasizing the fact that few of these indications have been treated in clinical studies and that the benefits of surgery for these indications have not been determined. Still, many physicians use these indications as a basis for recommending surgery^{2,10} clearly basing their decision on grounds of personal opinion and experience.⁴

Contraindications to tonsillectomy and adenoidectomy

While reviewing the indications for adenotonsillectomy it is important to note that certain instances are contraindicated to surgery. Some of the more obvious contraindications are uncontrolled systemic disease and blood dyscrasias. Concurrent acute tonsillitis or upper airway infections are also contraindications to surgery

as they may enhance operative and anesthetic risks.^{2,12} Overt or submucosal clefts of the palate are relative contraindications to adenotonsillectomy as well.^{2,4,10,12} In these cases both the tonsils and the adenoids provide tissue bulk in the pharynx and are potentially important tissue for effecting both voice control and velopharyngeal closure. Finally in most cases surgery is deferred in patients younger than three years of age¹² as blood loss can significantly alter their circulating blood volume.

Complications of Tonsillectomy and Adenoidectomy

Complications as a result of adenotonsillectomy have diminished significantly over the years. The most frequent complication is bleeding which most commonly occurs within the first day postoperatively, or 6-8 days after surgery when the operative eschar is sloughed from the tonsillar fossa.^{2,25} Although significant hemorrhage is a rare occurrence it is a constant threat that must be carefully evaluated and attended to.^{2,14,25} Mortality as a result of tonsil and adenoid surgery has diminished dramatically over the years and is presently rare and mostly preventable with the knowledge and technology currently available.^{14,25} Similarly morbid complications, other than postoperative pharyngeal pain, such as anemia, velopharyngeal insufficiency, nasopharyngeal stenosis, glossopharyngeal nerve injury, or vascular trauma, are largely preventable with careful, preoperative assessment and surgical procedures.²⁵

Summary

In conclusion, the decision to advise a patient to have a tonsillectomy, adenoidectomy or both has been the source of controversy for several decades. Nonetheless in the light of current evidence there are situations in which these procedures are definitely beneficial. In general, each case must be individualized, reviewing the indicative criteria in concert with the patient's morbidity (school missed, days bedridden, history of complicating disease, antibiotic reactions, risk of surgery) and various social parameters (work missed by parents, exposure of family members to infections, etc.). The efficacy of the operations have clearly been shown for certain indications but many patients do not fit into simple indicative categories with clinical evidence of efficacious treatment. It is in these cases where physicians find themselves weighing their perception of the respective risks and benefits of surgery and conservative medical treatment, a process which reflects physicians' training, experience, attitudes and values. In the future clinical research will hopefully further assist in these treatment decision processes and enable physicians to make as rational a decision as possible concerning adenoid and tonsil surgery.

Acknowledgements

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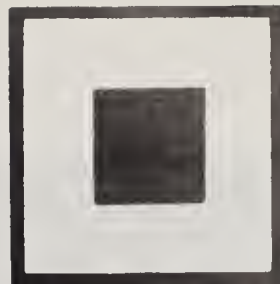
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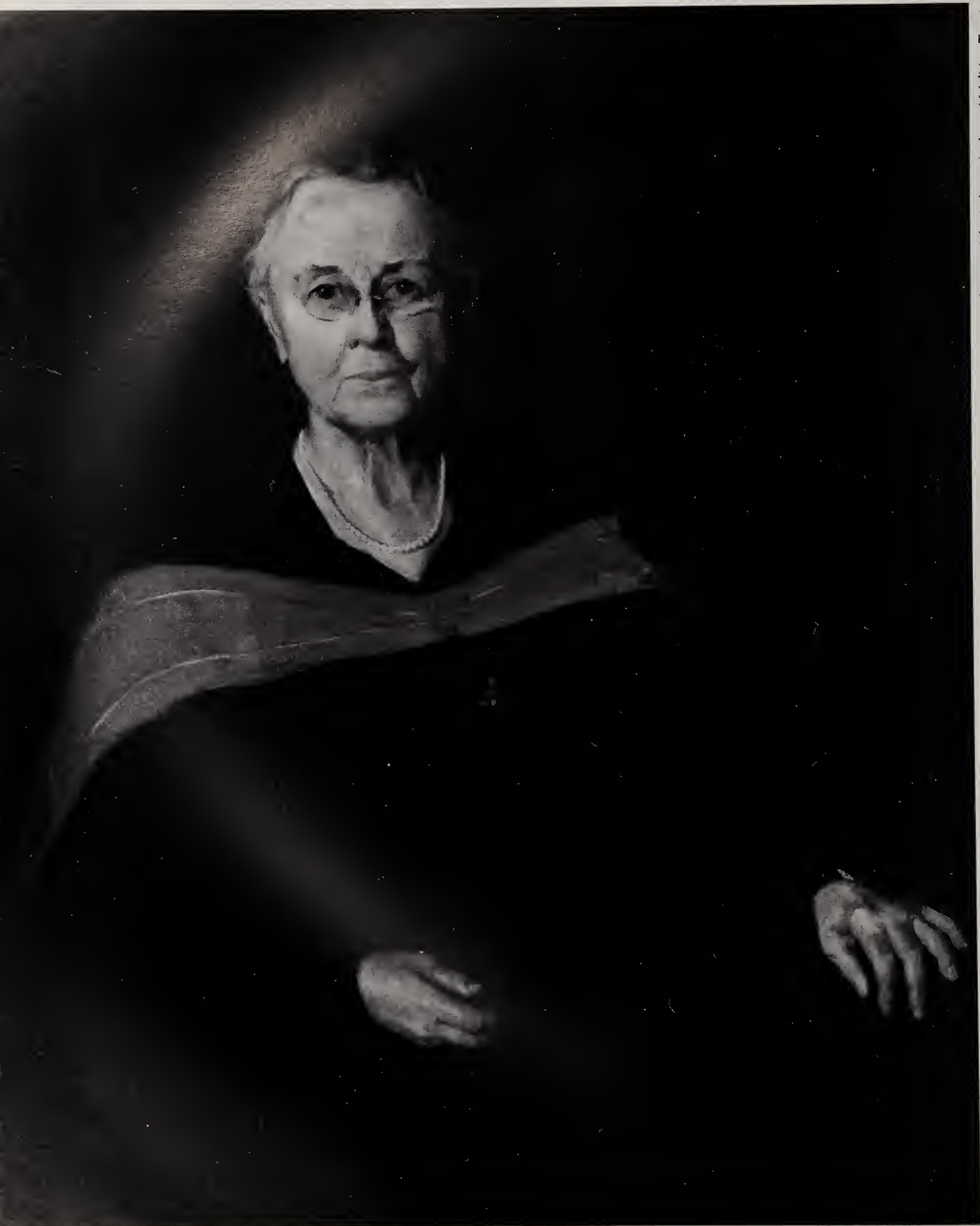
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Helen MacMurchy M.D. 1862-1957, "La Femme Oubliée"

Rose Sheinin, Ph.D., F.R.S.C., D. Hum. Lett., Shabir Bhimji, Ph.D., 9T0*

Helen MacMurchy was born on January 7, 1862, in Toronto, the eldest daughter of Marjorie Jardine Ramsay and Dr. Archibald MacMurchy, MA., LL.D., who was principal of the Old Grammar School, destined to become Jarvis Street Collegiate. She attended the Provincial Normal School where she earned her First Class Teacher's Certificate in 1881. While teaching at Jarvis Collegiate during 1881-1901, MacMurchy entered the Ontario Medical College for Women (OMCW), then associated with the University of Trinity College in Toronto, and graduated in 1900 with First Class Honors in Surgery and Medicine. In 1901 she earned her M.D. degree. So outstanding was her undergraduate medical thesis that it was published in *The Lancet* of December, 1901;¹ an event which undoubtedly contributed to her being accepted as the first female interne at the Toronto General Hospital.²

At the time, medical education was grudgingly given to women, by the then medical establishment, and in separate but linked institutions. Training at the OMCW was as equal as it could have been. The curriculum delivered to the women was identical with that offered to the Trinity Medical School by the same professors who were committed to the concept of higher education for women. However, no hospital in Canada would receive women for clinical training.

Thus the appointment of MacMurchy to Toronto General Hospital generated considerable discussion because of its major import for the education of women physicians and because it augured for a significant change in the practice of medicine in Canada. An editorial in *The Globe* of January 13, 1901 stated that "The moment it was decided to admit women to the practice of the medical profession the principle of complete equality and equal admission opportunities was conceded". It went on to point out that the admission of Dr. MacMurchy to the Toronto General Hospital was anything but radical, since Canada was in fact well behind the United States which had 302 positions occupied by women and "even the very citadel of conservatism", Britain, had 149 women physicians in hospital posts. The writer went on to say "that the same liberal and progressive spirit which brings to the service of the medical profession every discovery of science will throw open the doors of hospitals freely to women".

Having obtained the M.D. degree and therefore passed the first test for entry into the Canadian guild of physicians and clinical research scientists, Helen MacMurchy undertook postgraduate studies at The Johns Hopkins University Medical School in Baltimore, Maryland. This was the leading medical school both in terms of acceptance of women on a co-educational basis, and in the introduction of a scientific base to medical education. At Johns Hopkins, MacMurchy worked with Sir William Osler, who became her mentor. Subsequently MacMurchy did further postgraduate studies at the Women's College of Pennsylvania in Philadelphia.

Upon returning to Toronto, MacMurchy spent most of her time working for the welfare of poor and unfortunate children, and specializing in obstetrics and gynecology. Because of these interests, MacMurchy was immediately thrown into what was the medical scientific vanguard of the day; i.e. Public and Community Health, particularly as it affected the health care of women and children.

MacMurchy's many publications, including articles, government reports and material for the lay public, trace her development from a scientific physician interested in the infectious disease of women, to a clinical scientist concerned with the physical and mental health of children.^{3,4} This led quite naturally to her launching a crusade to upgrade the medical supervision of children in the schools. She argued that it was senseless to educate children if they were chronically malnourished, ill, or living in hygienically unsound conditions. MacMurchy's 1905 census of the "feeble minded" in Ontario and her outstanding work with children and with mentally-handicapped came to the attention of the Premier of Ontario, Sir James Whitney. In 1906, he created a new position for her: Inspector of the Feeble Minded. In 1910, she wrote the first major Canadian Report to a government in Canada on the subject of Infant Mortality.⁵ As a result, in 1910 MacMurchy was appointed Medical Inspector of Schools for the Toronto Board of Education.^{6,7,8}

Throughout this period MacMurchy was a moving force in the OMCW and in the Women's College Hospital (WCH), of which she was a co-founder. She taught continually at WCH, and finally in 1911, MacMurchy became an Assistant Demonstrator in Obstetrics and Gynecology at the Toronto General Hospital and in the Faculty of Medicine of the University of Toronto, an important first for women physicians in Canada.

In 1911 MacMurchy was invited to carry out an official provincial census of feeble minded adults and children in Ontario. In 1913, she was appointed Assistant

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Inspector of Hospitals, Prisons and Public Charities, a position she held until 1920. During her tenure she prepared reports on infant and maternal mortality, on the care of the mentally handicapped and on feeble mindedness. Her recommendations were instrumental in establishing a variety of preventive and curative attacks on these problems by government.

MacMurchy made a major contribution to Public and Community Health in Canada. Her reports identified the role of poverty in differential rates of infant mortality for rich and poor. She wrote, "The destruction of the poor is their poverty. The rich baby lives, the poor baby dies." In 1915, MacMurchy was named the First Inspector of Auxillary Classes of the Department of Education to provide needed health education to current and future parents.⁹ From 1920-34 she served as Chief of the Division of Child Welfare of the Department of Health of the federal government in Ottawa. This was, at the time, the highest civil service office held by a woman in Canada.

During this period Dr. MacMurchy wrote a series of works which made her nationally and internationally famous to medical practitioners, medical scientists, educationalists and to the lay person. These included "THE ALMOSTS", which dealt with the needs of mentally- and physically-handicapped adults and children.¹⁰ This manuscript so impressed Osler that he asked to write the introduction. He was unfortunately cheated of this privilege by his untimely death. In 1921, MacMurchy published her major work entitled "THE CANADIAN MOTHER'S BOOK".¹¹ It served mothers of that day as did Benjamin Spock's books on baby and child care during the post World War II period. MacMurchy used her position as civil servant, lecturer, and writer to stress the fundamental importance of the mother and of stable and healthy homes for an enlightened concept of Public Health. She urged society to "Concentrate on the mother. We must glorify, dignify and purify motherhood by every means in our power." Although single and childless herself, MacMurchy confessed that "the dearest wish of a true woman is to be a mother."

Her emphasis was to help women understand childhood diseases and therefore to be able to prevent child deaths, particularly in remote areas of the country.^{12,13,14,15} Dr. MacMurchy carried out special investigations on the contribution to public health of the medical inspection of schools, child welfare and public health management right across the North American Continent. Her conviction that intelligence and organizational ability were essential to the homemaker/mother role led her to apply the same standards of efficiency and economy to a social problem she viewed with increasing alarm; the rising incidence of feeble mindedness among the population. Her concern about the institution central to the preservation of national character, the family, prompted her to apply business methods, planning and conservatism to human resources. Like many of her science-oriented professional colleagues of the period, MacMurchy endorsed eugenic principles in social planning.

In 1934 she began to advocate sterilization of the

mentally unfit to control their procreation, thereby causing major controversy and wide spread debate across Canada. This was consistent with the emerging pseudo-scientific thrust in the latter years of the nineteenth century, particularly in Great Britain, of social Darwinism as a mechanism for dealing with human social problems. In hindsight, it is clear that this approach, which was a mis-application of science as a replacement for true social reform, would fail. Unfortunately, among middle class reformers already attracted to organization and bureaucratic norms, laws of heredity provided them with a sense of security and an opportunity for control. The new immigration had begun to transform society and in the opinion of many, created special problems that threatened the structure and very stability of society. Hereditarian determinism provided a rationale for restrictive immigration, and for dealing with medical problems which, at the time, had no other "scientific" exploration.

MacMurchy was an outstanding product of her day, her cultural environment and her medical-scientific training. She had done much to establish the concepts and practice of public health in Canada, which carry on to this very day. Indeed, as we move once again to preventive health and community medicine, MacMurchy is there to lead the way.

Her many accomplishments as a medical scientist and pioneer in public health, were recognized widely. She was invited as keynote speaker to many national and international conferences of physicians, members of the community and public health sectors and educators. In 1949, Dr. MacMurchy was named as one of the ten leading women physicians in the world at the International Celebrations convened to honor the first women to graduate with an M.D. degree, Dr. Elizabeth Blackwell. MacMurchy was made an Honorary M.D. of the University of Toronto in 1923 and was elected a Life Fellow of the Academy of Medicine of Toronto in 1939. In 1934, she was named a Commander of the British Empire. Her portrait was painted by Marion Long, and hangs in the Academy of Medicine.

Dr. MacMurchy was a staunch fighter for the rights of women in all domains of life. She was a charter member of the Federation of Medical Women in Canada and its first President. She fought continually for women's health and was a germinal force in the establishment of the Women's College Hospital and its predecessors.

At the time of her death in Toronto on October 8, 1953, the *Globe and Mail* wrote in an editorial "Throughout her life Helen MacMurchy... combined the finest virtues of a family doctor, a teacher, a specialist and a public health leader who saw problems of all these activities through the eyes of a humanitarian. She deserves long to be honored in the memory of mankind for her contributions to its welfare".

Helen MacMurchy's career in medicine and government spanned two generations, from the turn of the 20th Century to the Depression. Her advocacy of public health reform and numerous medical and educational publications on a wide range of issues brought her both Canadian and international attention. Her status and

influence in two traditionally male dominated arenas, medicine and government, inspired the Pioneering Woman model in her time. And yet, as noted by McConnachie,¹⁶ she has been forgotten and relegated to "l'Oubliee".

Today, it remains for us to re-discover her for the history of Canadian Medicine, medical science and delivery of health care. This is particularly important as Canadian women begin to take the place MacMurchy sought for them so many years ago.

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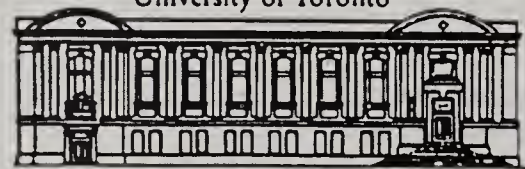
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Late Protrusio Following Acetabular Floor Bone Grafting

H.U. Cameron, M.B., Ch.B., FRCS(C), S. Bhimji, 9T0, M.J. Weinberg, 9T0*

Case Report

This 69 year old female had severe rheumatoid arthritis for 15 years. Her past history included multiple joint problems, but her chief complaint was pain in both the right and left knee. The patient found it increasingly difficult to walk, managing 200-300 yards at most on level ground. Examination revealed the right knee to have a 15° valgus with a fixed flexion contracture. The range of flexion was from 15° to 110°, and some instability was observed in the sagittal plane. Further, there was an effusion and bulky synovitis but pulses and sensations were intact in the lower limb.

**Staff Orthopedic Surgeon,
Orthopedic and Arthritic Hospital*

Examination of the left knee revealed an effusion with synovitis, and also a fixed flexion deformity of approximately 10° with a further flexion of 100°. The knee was stable and there was a suggestion of a Baker's cyst behind the knee. She took 5 mg of prednisone daily and 250 mg of Naprosyn twice a day with supplementary Entrophen.

Over the last 5 years, her condition worsened, with a significant reduction in mobility that required a replacement of both her left and right knee. The left knee had multiple large cysts on the femoral condyles and tibial plateau. These were grafted with bone. A cemented femoral component and a non-cemented porous metal backed tibial component was used.

Two years ago a right total hip replacement was carried out. A 3 cm defect in the acetabular floor was found. The residual femoral head was used to block



Figures 1a and b: The acetabular component has completely subsided into the pelvis. At exploration essentially no viable bone was found in the floor but the walls were intact.

graft, thus locking the grafts to the inside of the pelvis and laying more bone on top. Wire mesh was used to prevent too much cement intrusion into the graft and a 49 mm spectron* plastic cup was inserted. This spectron cup has 2.5 mm pods to prevent the implant bottoming out, thus giving a wall thickness of 6 mm of plastic. A 3 mm plastic lip is also present around the periphery to further pressurize the cement. The head used was a 32 mm ceramic head.

This lady did well until recently. Her range of movement in both knees was 0 to 120° and stable in both planes, and she was completely free from pain. Suddenly her replaced hip became painful and she was not able to move her leg. Her pain was not relieved with anti-inflammatory medication. A few days later the contralateral knee also became extremely painful and she had a very limited range of motion.

Discussion

Radiological examination revealed that the plastic cup had sunk into the pelvis (Figures 1a and b) and the tibial component of her knee had sunk posteriorly (Figures 2a and b). It was initially believed that the above condition was probably due to either loosening of the acetabular cup, acetabular migration or fracture of the femoral neck. She was taken into the operating room and her hip was explored. It was observed that the whole acetabular floor had virtually disappeared. Her

hip was revised. There was no evidence of infection. When the acetabular component was removed the bone grafts were found to have absorbed completely along with some of the adjacent acetabular floor. In other words, there was no floor to the acetabulum at all. The bony ring was intact. A threaded cup was therefore screwed into the acetabular walls and achieved an excellent grip of over 1,000 in lbs. The floor was massively grafted with allograft femoral condyles (Figure 3). A few weeks later her knee was also revised (Figures 4a and b).

In a previous review of acetabular floor reconstruction in total hip revisions, it was felt that all acetabular floor grafts probably united. No late problems were identified and specifically no cases of further protrusion were seen.¹ It was therefore felt that it was no longer necessary to use protrusio or pelvic side wall bearing acetabular cups. The failure of acetabular grafts at 2 years in the primary case with rheumatoid arthritis suggests that this may not always be the case.

It is not clear why both joints should have collapsed within days of each other. Perhaps this lady went through a phase of bone resorption without a phase of deposition. Perhaps simply the collapse of the hip led to increased load on the contralateral knee which then collapsed in turn.

Bone grafts have previously been noted to unite.² Perhaps the combination of the steroid and nonsteroid-



Figures 2a and b: The uncemented tibial component has sunk posteriorly and medially, which is uncommon. The cemented femoral component shows some stress relief osteoporosis of the anterior femoral condyles.



Figure 3: The femoral component was quite tight. A hemispherical screw cup obtained an excellent grip on the walls and massive acetabular floor grafting was carried out using allograft bone. Multiple supplementary screws were used to fill the holes in the periphery of the metal cup for additional fixation.



Figures 4a and b: The bone of her femur and tibia was found to be very soft. The knee was therefore revised with a Tricon M* stem tibial component cemented in place.

dal anti-inflammatory medication prevented union.

One potential cause of failure was that the plastic was thin, thus transmitting localized stress to the cement bed resulting in slow breakdown. However, when seen 6 months prior to the joint collapse there was no pain and no radiological evidence of sinkage or loosening in any of her replaced joints. The sudden onset of pain and inability to walk suggested a catastrophic failure more than slow loosening with bone graft resorption and then protrusion.

This failure suggests that in patients on steroids there is still a place for a so called "protrusion" cup which has pelvic support flanges resting on the outer wall of the pelvis when a cemented cup is to be used.³ In this particular case the technique adopted was to use a hemispherical screw cup with bone grafting through the apical hole as the walls were intact.

This case indicates the necessity for continued review over the long term of techniques previously reported in handling particular orthopedic problems.

**Richards Manufacturing Company, Memphis, Tennessee.*

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Rheumatic Disease Research — at the Molecular Level

Dr. K. Siminovitch, Division of Rheumatology, Toronto Western Hospital

The Rheumatology Research Lab at the Toronto Western Hospital is interested in the genes of the immune system which carry the genetic code for developing arthritis. The immune system constitutes the principal means of defense against infection by microorganisms such as bacteria and viruses and probably against cells which have undergone malignant change. Many forms of arthritis are characterized by dysfunction of the immune network, such that the body no longer distinguishes its own natural constituents from foreign agents. Our group is exploring the genes which may be responsible for this abnormal immune or "auto-immune" response which is the hallmark of certain forms of arthritis, including rheumatoid arthritis and systemic lupus erythematosus. Until now, insight into the cause of autoimmune disease has eluded scientists despite intensive research efforts. Consequently, preventive therapy and cure have not been possible. How-

ever, the powerful new technology of recombinant DNA, which has recently entered the realm of biomedical research, should dramatically improve the understanding of arthritis. Already this technology has had a tremendous impact on cancer research, and on the diagnosis and prevention of infectious and genetic disorders. Recombinant DNA has opened important and exciting new avenues for arthritis research. We are applying these techniques to the study of autoimmunity, and in conjunction with Dr. David Bell (University Hospital, London) are isolating and cloning genes which carry the message for specific autoantibody production. We ultimately hope to introduce these cloned genes into human lymphoid cells in culture in order to elucidate the molecular controls of autoantibody production. This knowledge may eventually be applied to designing improved therapeutic strategies for autoimmune arthritis.

The Effect of Direct Current Field on Experimental Spinal Cord Injury

Tat H. Wong, Michael G. Fehlings MD, Charles H. Tator MD PhD FRCS (C), Division of Neurosurgery, Playfair Neuroscience Unit, Toronto Western Hospital, University of Toronto

There is experimental evidence that direct current (DC) fields may enhance the recovery and regeneration of injured mammalian spinal cord axons. Recently, our laboratory demonstrated that the application of a DC field to the injured rat spinal cord results in improved clinical neurological function as assessed by the inclined plane technique, enhanced descending axonal function as indicated by motor evoked potential recording, and an increased number of intact axons traversing the injury site as shown by axonal tracing techniques. Furthermore, the data from our morphometric analysis of axons at the site of spinal cord injury (SCI) in rats treated with a DC field show that DC fields resulted in an increased number of axons at the injury site, espe-

cially large calibre axons, and a reduction in the extent of post-traumatic demyelination. These results are the first to show that DC stimulation promotes neurological recovery and enhances axonal survival in adult rats with SCI. It remains unclear however, the precise mechanism by which DC fields act. Nevertheless, it has been postulated that DC fields may act by increasing growth of injured axons, by decreasing axonal dieback following transection, or by modifying "injury currents" which promote axonal degeneration. These results represent our findings to date. With further work, we hope to establish the mechanism by which DC fields modulate the growth of injured axons and to establish safe criteria for DC stimulation of the cord.

Retinoblastoma Gene Identified

Malgorzata J.M. Nowaczyk, 8T9

Retinoblastoma (RB) is one of known tumors with hereditary predisposition. From genetic studies of individuals with retinoblastoma and of their offspring, the inheritance of the predisposition to develop this tumor was established. Retinoblastoma tumors arise when both alleles of the gene located in chromosome band 13q14 are mutated and the gene is not expressed. In patients with a germline mutation affecting the RB gene, retinoblastoma is inherited as an autosomal dominant trait. This mutation also predisposes individuals to development of osteosarcoma tumors. These rare tumors with a hereditary predisposition allow for identification of the premalignant state, and as such are of interest in research of the kinetics of malignant cells of all types, not only those of embryonic origin.

The identification of the RB gene and its products has

been a subject of research in many laboratories throughout the world. Most recent advances in retinoblastoma research come from the laboratory of Dr. Brenda Gallie, at the Hospital for Sick Children, Toronto. In an unpublished paper James Dunn — a graduate student at the Institute of Medical Science — reports that 65% of analysed retinoblastoma tumors showed a mutation in a 4.7R gene known to be located in the 13q14 band and to contain the locus for RB1. Since the assay used is known to be able to detect only 30-50% of the single base mismatches, it was concluded by extrapolation that all RB tumors have mutations affecting the 4.7R gene and that therefore 4.7R is the RB1 gene. Final proof, however, will require unequivocal identification of mutations in both alleles of all retinoblastoma tumors.

Long-Term Treatment of Alcoholic Liver Disease with Propylthiouracil

M. Joseph Weinberg 9T0 and Shabir Bhimji 9T0

Alcoholism is an extremely serious and very complex social and medical problem. The cost to the individual and society is enormous. Dr. Orrego *et al.*, at the Gastroenterology Program, Addiction Research Foundation, Toronto, have recently published an exciting study clearly demonstrating a role for propylthiouracil treatment in alcoholic liver disease (N. Eng. J. Med 317:1421-7, Dec 1987). The rationale for this study came from several animal and human studies. In initial animal investigations, alcohol-treated animals were subjected to situations that accentuated the relative hypoxic conditions in Zone 3 of the liver. Propylthiouracil treatment protected against hepatocellular necrosis. Other studies in patients with alcoholism demonstrated

reduced hepatic blood oxygen tension which correlated with hepatocellular necrosis. Finally, further animal studies showed that propylthiouracil was protective against other forms of toxic liver injury in which the damage may not be hypoxic.

In the present study, Orrego *et al.*, investigated the effects of propylthiouracil on mortality in patients with alcoholic liver disease in a long-term double blind, randomized clinical trial involving 310 patients. In essence the data demonstrated that administration of propylthiouracil is beneficial in the treatment of alcoholic liver disease as shown by a significant reduction in mortality rate.

BOOK REVIEWS

Encounters Between Patients and Doctors. An Anthology.

*edited by John D. Stoeckle, M.D.
M.I.T. Press, Cambridge, 1987*

Do you remember the first time you saw a patient? With the complete armament of shiny new medical instruments you strode into the patient's room a little more nervous than the patient. Somehow after a few years of medical school, the nervousness and (hopefully) the awkwardness was gone, and you were beginning to think that you had a handle on this doctor-patient thing.

This soft-cover 440 page anthology challenges the reader to reexamine in a new light, the everyday "routine" patient encounter. Beginning with an extensive overview of the ground rules of Doctor-Patient relationships, the book is then divided into several sections; the dynamics of the interchange, the nature of the communication, barriers to communications, case studies and ending with thoughts on the "good relationship". This anthology contains articles which range in age from Henderson's article on 'Physician and Patient as a Social System' first published in 1935 to 'Studies on a Negotiated Approach to Patienthood' published in 1976. The overview has references as recent as 1986 and each section is preceded by an introductory comment by the editor.

The editor states that the selection of articles was motivated by the aim to "stimulate and sustain interest in the plain, difficult, and satisfying tasks of care while reviving memories of those unique encounters that begin at the very first visit with a patient - or a doctor". This book certainly fulfills this mission.

Some of the more interesting points will be highlighted here. Parsons' article on the sociological perspective of illness succinctly dissects the patient's motivation in seeking medical help and shows how the relationship is altered by the presence of 'hidden agendas'. One of the more interesting concepts stems from the analysis of the diagnostic process by Scheff. He concludes that diagnosis is a process of negotiation between the patient and doctor and that the final outcome is highly dependent on interviewing technique. Lastly, deficiencies of Doctor-Patient communication is addressed in a study by Francis et al. They show that patient compliance is a function of two factors: patient satisfaction with the physician and patient perception of the seriousness of the illness. This brings home the message that an empathic, warm relationship coupled with a keen ear is central to effective medical care.

This book offers much food for thought. It is perhaps timely reading, in this age of high technology, for both those in the process of acquiring clinical skills, as well as to those in practice. One can not help but be changed by the provocative ideas from this anthology.

Michael Wong 8T9

Stopping Scoliosis

*by Nancy Schommer
Doubleday, New York, 1987, 143 pages*

This book is on the diagnosis and treatment of a common and potentially crippling disorder of the spine written by a victim of scoliosis. While it is oriented towards laypersons, the book could prove useful to medical students who are interested in learning more about the attitudes of patients, particularly teenage women, towards the disease and its treatment. Nancy Schommer discusses her own experience with scoliosis, focusing on how ignorance, pride, and fear kept her from seeking help until her scoliotic curve had progressed to the point where extensive surgery was required to correct the deformity. In the course of her encounters with physicians, she discovered that many were ignorant of the natural history of the disorder and would often reassure scoliosis patients that their curves would not progress when in many cases they would.

The author's description of the anatomy of the spine and her discussion in layman's terms of how a scoliotic curve is assessed, and the medical and surgical treatments that follow, is impressive in its clarity and accuracy. Descriptions of each method of treatment are followed by a discussion of their side effects and the personal experiences of some patients who have undergone that form of management. This can be particularly reassuring to those scoliosis patients who are having doubts about undergoing the type of treatment needed to arrest their disease. Schommer also provides a simple technique for parents to use in screening their children for scoliosis and she addresses such concerns as radiation exposure from repeated spinal radiographs, as well as pregnancy in patients with the disorder.

The book is primarily geared for American readers. No mention is made of what centres in Canada specialize in the treatment of this disorder, although the author does note the contribution made by Drs. Walter Bobechko and Morley Herbert at the Hospital for Sick Children. Drs. Bobechko and Herbert developed the technique of electronic stimulation of paraspinal muscles for arresting the progression of scoliotic curves. This is one of the primary methods used in the medical management of scoliosis today.

This book would be a useful addition to the collection of any secondary school library given that scoliosis is primarily a disease of teenage women. In addition, the family physician would find it a useful source of information to recommend to patients or to the parents of scoliosis victims interested in learning more about the management of this disease.

Gavin Semelhago 8T9

How To Choose A Medical Specialty

by Anita D. Taylor

W.B. Saunders Company, Philadelphia, 1986. 222 pages

When I was fourteen my classmates and I were subjected to an aptitude test consisting of about 100 questions. A few weeks later a computer had chosen our future careers for us. (The result: medicine was not for me, with which evaluation a humbling number of medical school admission committees were later to agree.)

The notion that it is possible to determine an individual's "personality type" and that a specific career can be matched to it is at the heart of "How To Choose A Medical Specialty".

The book is divided into thirty-six sections describing each medical specialty or subspecialty. Each section contains information on residency training, physician supply, income, types of practice, and, of course, which personality traits characterize members of the specialty. Advice to medical students interested in each specialty is also offered. The information was culled from interviews with physicians. Each section ends with a multiple choice scoreboard allowing the reader to match his or her personality to the personality profile of that section's specialty and arrive at a score out of fifty.

Thus, we learn that orthopediac surgeons have "biomechanical minds", dislike "depressed people who don't have the will to get well", and are "doers not thinkers"; that general surgeons and respirologists are "doers not talkers"; and that general internists are "thinkers not doers". Dermatologists seem to be happy people since they are the only ones who could not think of anything they disliked about their specialty.

The book also contains comments that are not bound to come as revelations to many readers. Who, for example, will be surprised to learn that plastic surgeons "have a need for applause and admiration"? Cardiac patients, however, would surely be comforted by the knowledge that "cardiologists need to (know) the physiology of the heart".

The style is bland throughout; vapid expressions such as "significant other" abound. The only high point of the book is a bit of unwitting nobokovian humour in which a German psychoanalyst, Prof. Karl Menninger (note the pun), observes that urologists "are... the most unrepressed of all the specialists... being almost immune to conjectures regarding their motivation for choosing... urology".

The nefarious idea that human beings are pegs to be fitted in their like-shaped holes, a fantasy of social planners, pervades "How To Choose A Medical Specialty", and I honestly can't see much use in it for medical students.

Alain Dagher 8T9

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The Oxford Companion to Medicine

edited by J. Walton, P. Beeson, R. Scott
Oxford University Press, New York, 1986.
2 volumes, 1524 pages.

This 2 volume reference set offers a unique approach to medicine that can be appreciated by both a lay person and the medical professional. It is essentially set up in the form of an encyclopaedia and covers a myriad of medical, quasi-medical, and extra-medical topics. The entries are meant to be informative without being technical; any medical terms are asterisked for the reader to cross reference that specific entry elsewhere in the book.

The Companion consists of three reference areas. There are about 150 entries dealing with a major aspect of medicine ranging from drug addiction and aerospace medicine to ethical issues in medical practice and fringe medicine (cults and quackery) to pathology and tropical medicine. With each of these topics, the Companion goes into a definition of the subject, the historical perspective, and current understanding and practices. For example, the section on plastic and maxillofacial surgery describes how ancient Egyptian physicians dealt with facial disfiguration from war injuries, and subsequent instances throughout history (from 13th century India to 19th century Europe) of advances in plastic reconstructive surgery. More recent developments in the earlier half of the twentieth century in the United States and the United Kingdom leading to present day understanding of this surgical field are chronicled. The limitations and ongoing progress in today's practice of plastic surgery — microsurgeons can place 10 or 12 separate sutures around the circumference of an artery of no more than 0.5 to 1 mm total outside diameter — are then described.

Aside from these major entries on medical topics, the Companion also contains entries on individuals throughout history who have made significant contributions to medicine. Over 1000 biographies of men and women (from Robert Adams of the Adams-Stokes Attacks fame to John Keats, British physician and poet extraordinaire) are included. In addition, information on major

medical institutions and medical statutes is also included.

The Companion rounds itself off by covering medical terms and concepts with about 500 entries. Again, missing is the technical detail of a medical dictionary, but providing enough information to convey the basic idea. For example, the following is a typical entry:

ANTIBODY. Any of a class of *proteins capable of reacting with an neutralizing specific *antigens. Antibodies are *serum *globulins with a wide range of specificity for different antigens. See also IMMUNOLOGY.

Despite the simplistic nature of these definitions, the student or practitioner of medicine can still appreciate the non-technical prose in clarifying complex concepts.

The Companion is geared towards readers who are aware of the impact medicine has not only in their lives, but also in the matrix of social structure. Consequently, the Companion takes a position of exposing the intricacies of medicine, stripping away the intimidating jargon where possible (and patiently explaining where medical terms are unavoidable) and essentially humanizing it. There are a number of entries on medical education, the organization of medicine, its relationship to government, and the role of women in medicine.

The Companion is illustrated with photographs, drawings and schematics, and lithographs. Their number is rather sparse, and they are mainly used to clarify a point or show an example; consequently, the pages of text are rather esthetically monotonous. This is not to say that it should be filled up with gratuitous photographs and drawings (making it even thicker and heavier, and more expensive) in later editions, but as a reference book, a few more would be a welcome addition.

The Companion is an excellent book for the bookshelf; the two volumes are a nice size (about 6"x9"x1½" each volume) and sturdily bound with a slick outer leaf. In addition to looking good, the two volumes are eminently readable both in a reference frame and for interest's sake.

James Kim 8T9

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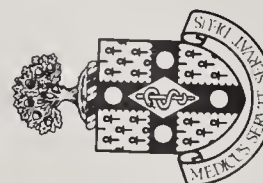


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	Dr. David Lawee	Dr. Arthur Scott	
		Dr. J. Gerald Scott	

TYLENOL* NO. 1 FORTE

acetaminophen with codeine

Indications: TYLENOL NO. 1 FORTE acetaminophen with codeine is indicated for the relief of mild to moderate pain. For example: headache; dental pain; myalgia; dysmenorrhea; pain following trauma; pain following operative procedures. It is also indicated as an analgesic/antipyretic/antitussive in the symptomatic treatment of colds.

TYLENOL NO. 1 FORTE acetaminophen with codeine may also be effective in relieving the pain associated with various forms of arthritis, but is **not** indicated as primary therapy for rheumatoid arthritis and similar inflammatory conditions.

Contraindications: Hypersensitivity to acetaminophen or codeine.

Warnings: Massive acetaminophen overdose can be toxic and potentially fatal. In adults, hepatotoxicity from acetaminophen is unlikely to occur with overdoses of less than 10 grams ingested at one time and fatalities are unlikely to occur with overdoses of less than 15 grams ingested at one time.

This product contains codeine and should not be administered to children except on the advice of a physician.

Precautions: The sedative effect of codeine is additive to that of other CNS depressants, including alcohol. Dosage may need to be reduced when administering this product with other CNS depressants and patients should be cautioned about driving a car or operating potentially hazardous machinery if they become drowsy or show impaired mental or physical abilities while taking codeine.

This product has the potential for being abused.

Safety in pregnancy has not been established. The product should not be administered during pregnancy unless, in the judgment of the physician, the potential benefits outweigh the possible hazards.

Adverse effects: Acetaminophen may occasionally cause gastric upset. The incidence and severity of this adverse effect is less than that after A.S.A. administration.

The most common adverse effects of codeine include lightheadedness, drowsiness, nausea and constipation. Respiratory depression is seen in higher dosage.

Overdose symptoms: The manifestation of an overdose of TYLENOL NO. 1 FORTE acetaminophen with codeine capsules/tablets are those of acetaminophen overdose combined with an exaggeration of the adverse effects of codeine.

The early symptoms of acetaminophen overdose overlap the symptoms of codeine overdose and include gastrointestinal irritability, nausea, vomiting, anorexia, diaphoresis and pallor. Symptoms of hepatic necrosis may become evident from three to five days following ingestion.

In sufficient overdose codeine can cause euphoria, dysphoria, miosis, a decrease in respiratory rate, cyanosis, and hypotension. Death due to respiratory failure may result.

Treatment: The stomach should be emptied promptly by lavage or induction of emesis with syrup of ipecac.

The hepatotoxic effect of acetaminophen overdose can be countered with the antidote N-acetylcysteine. Further information on the clinical course of acetaminophen overdose and its treatment with N-acetylcysteine is available from McNEIL Consumer Products Company, McNeil Pharmaceutical (Canada) Ltd. or the nearest Poison Control Centre.

The respiratory depressant effect of codeine overdose can be countered with a specific narcotic antagonist such as naloxone. In the presence of hypoventilation or apnea, oxygen should be administered and respiration assisted or controlled. A patent airway must be maintained.

Adult dosage: TYLENOL NO. 1 FORTE acetaminophen with codeine: 1 or 2 capsules/tablets 3 - 4 times daily as required, not to exceed 8 capsules/tablets in a 24-hour period. Do not exceed the recommended dose unless advised by a physician. Use longer than 5 days only on the advice of a physician.

Supplied: Capsules: Each red and grey opaque gelatin capsule (size "0") printed McNEIL in black along the grey half and the McNEIL logo printed in black along the red half, contains: acetaminophen 500 mg, caffeine 15 mg in combination with codeine phosphate 8 mg. Bottles of 20 and 60 capsules.

Tablets: Each round, white, uncoated tablet, flat-faced, beveled, engraved "TYLENOL NO. 1 FORTE" one side and flat-faced, beveled, engraved "McNEIL logo" on the other side contains: acetaminophen 500 mg, caffeine 15 mg, and codeine phosphate 8 mg. Bottles of 24 and 50 tablets.

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PHARMACEUTICAL (CANADA) LTD. 

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*TRADE MARK

PAIN #1



N **TYLENOL***

NO.1

FORTE

acetaminophen 500 mg, caffeine 15 mg
and codeine phosphate 8 mg.

NO STRONGER NON-PRESCRIPTION ANALGESIC/ANTIPYRETIC IS AVAILABLE

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